



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

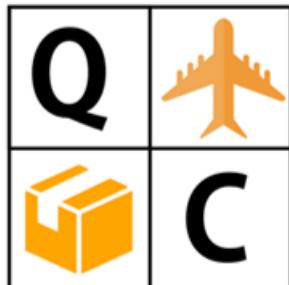
Escola Superior d'Enginyeries Industrial,
Aeroespacial i Audiovisual de Terrassa

Degree: AEROSPACE ENGINEERING

Course: Engineering Projects

Quick-change regional aircraft

QCRA



QC AIRCRAFTS

Contents: DRAWINGS

Group: G04-AE-2020/21-Q1

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Students:

Asensio Garcia, Cristian	León Delgado, Alexis	Navarro Gorgojo, Pablo
Busquets i Soler, Lluc	López Flores, Arnau	Pérez Gil, Hugo
Chaler Tost, Clàudia	Martí Arasa, Marc	Roig Cererols, Marta
Ferrer Brao, Jordi	Molina Cuadrado, Alba	Ruiz Álvarez, Óscar
González Chirivella, Víctor	Montilla Garcia, Carles	Villalonga Domínguez, Pablo

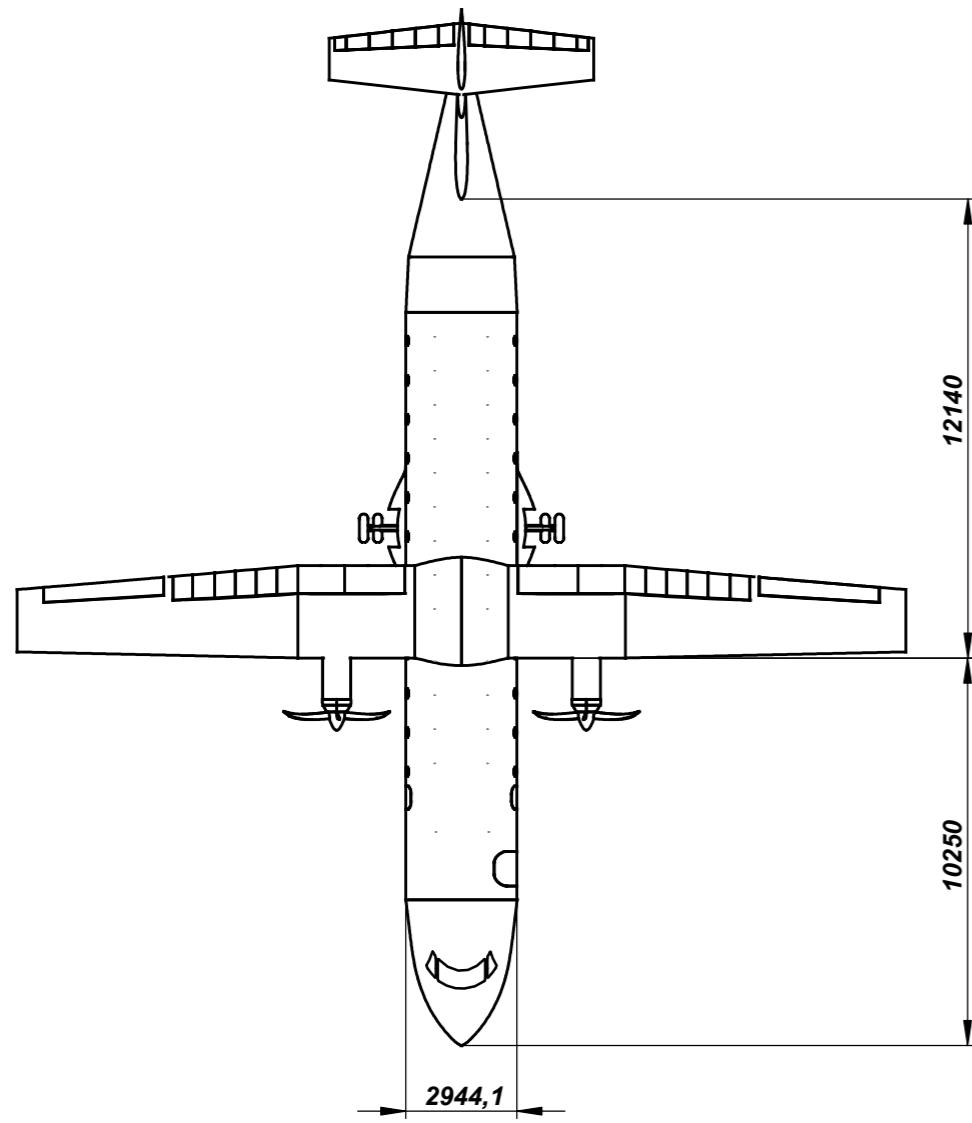
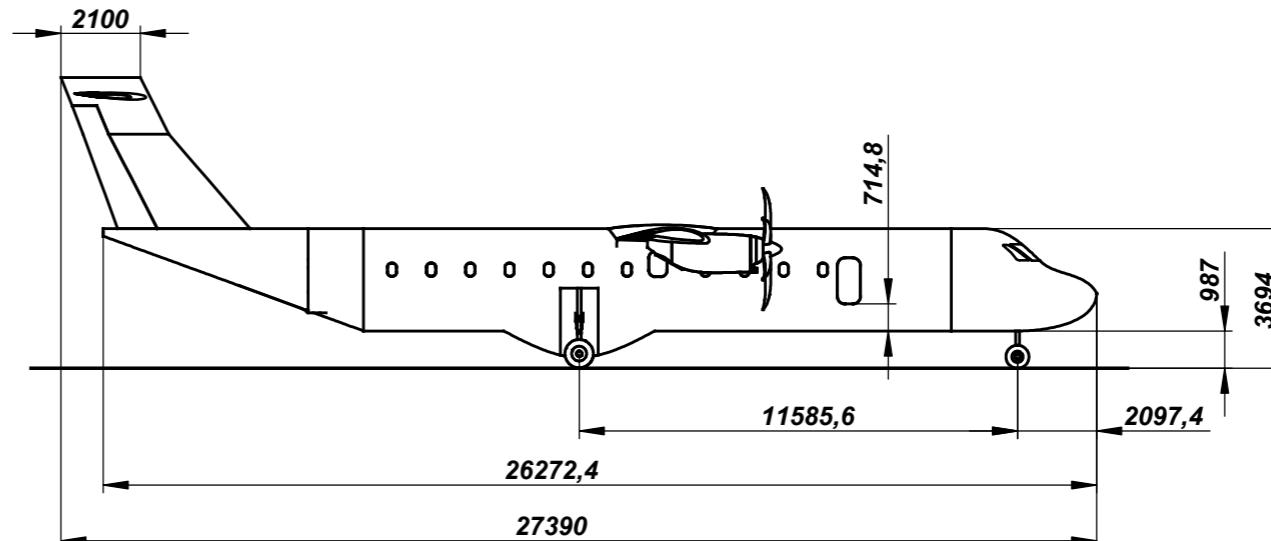
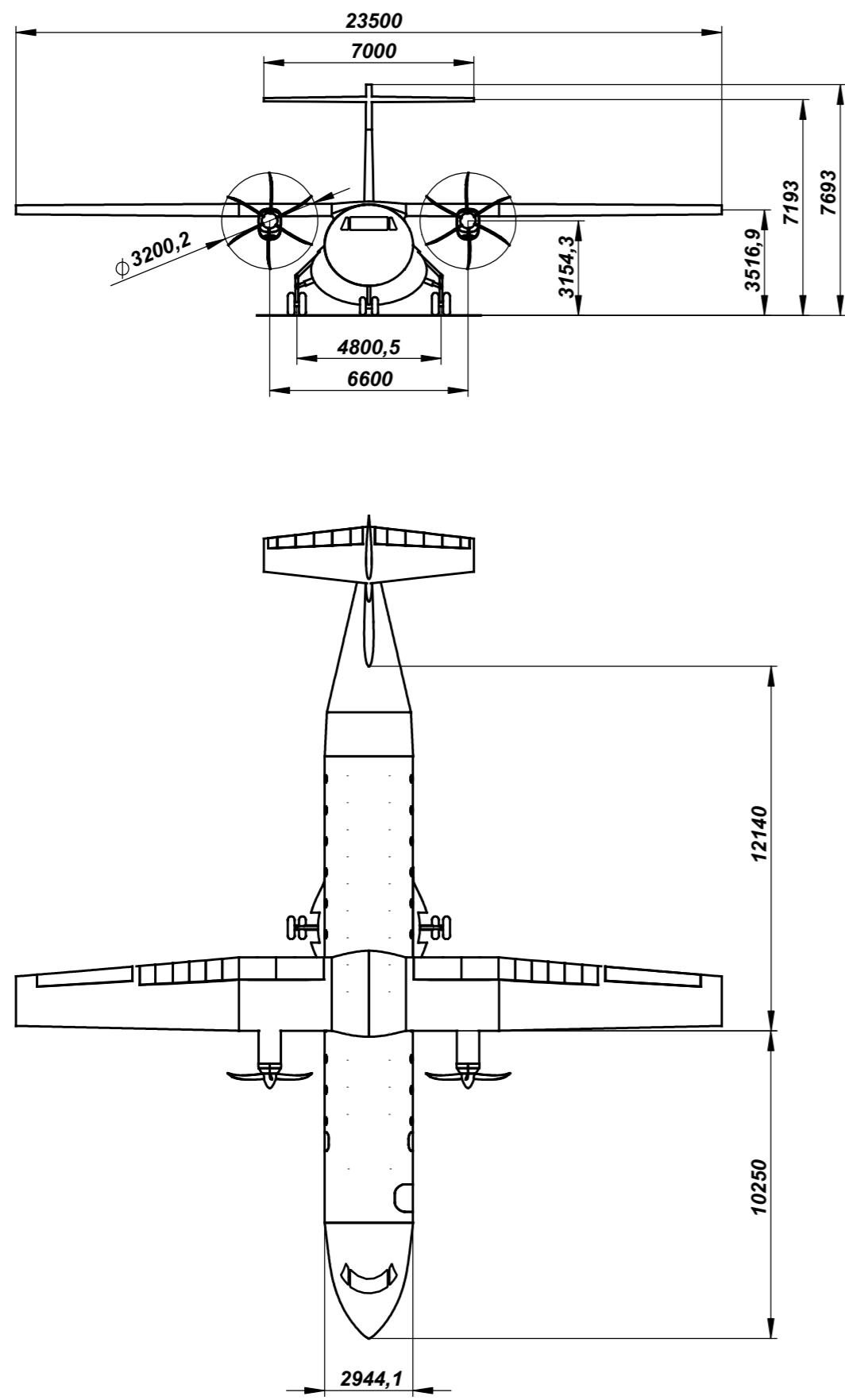
Supervisor: Nualart Nieto, Pau

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1 Aircraft general drawing

The general drawing including the basic measurements of the QCRA aircraft is added in page D2.



0	Aircraft general drawing	1	-	23500x7693x27390
Item	Name	Quantity	Material	Measures (mm)
Q REGIONAL C AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC TERRASSA	ESEIAAT
SCALE 1:200	0. AIRCRAFT GENERAL DRAWING		PAGE D2	

2 Cargo-passenger switch system

The cargo-passenger switch system assembly drawing is added in Page D4.

2.1 2-seats-abreast

The corresponding subsystem drawing is included in Page D5.

2.2 Standard pallet

The corresponding subsystem drawing is included in Page D6.

2.3 Single-row pallet

The corresponding subsystem drawing is included in Page D7.

2.4 Type I Emergency Door pallet

The corresponding subsystem drawing is included in Page D8.

2.5 Type IV Emergency Door pallet

The corresponding subsystem drawing is included in Page D9.

2.6 Standard inner rail

The corresponding subsystem drawing is included in Page D10.

2.7 Single-row inner rail

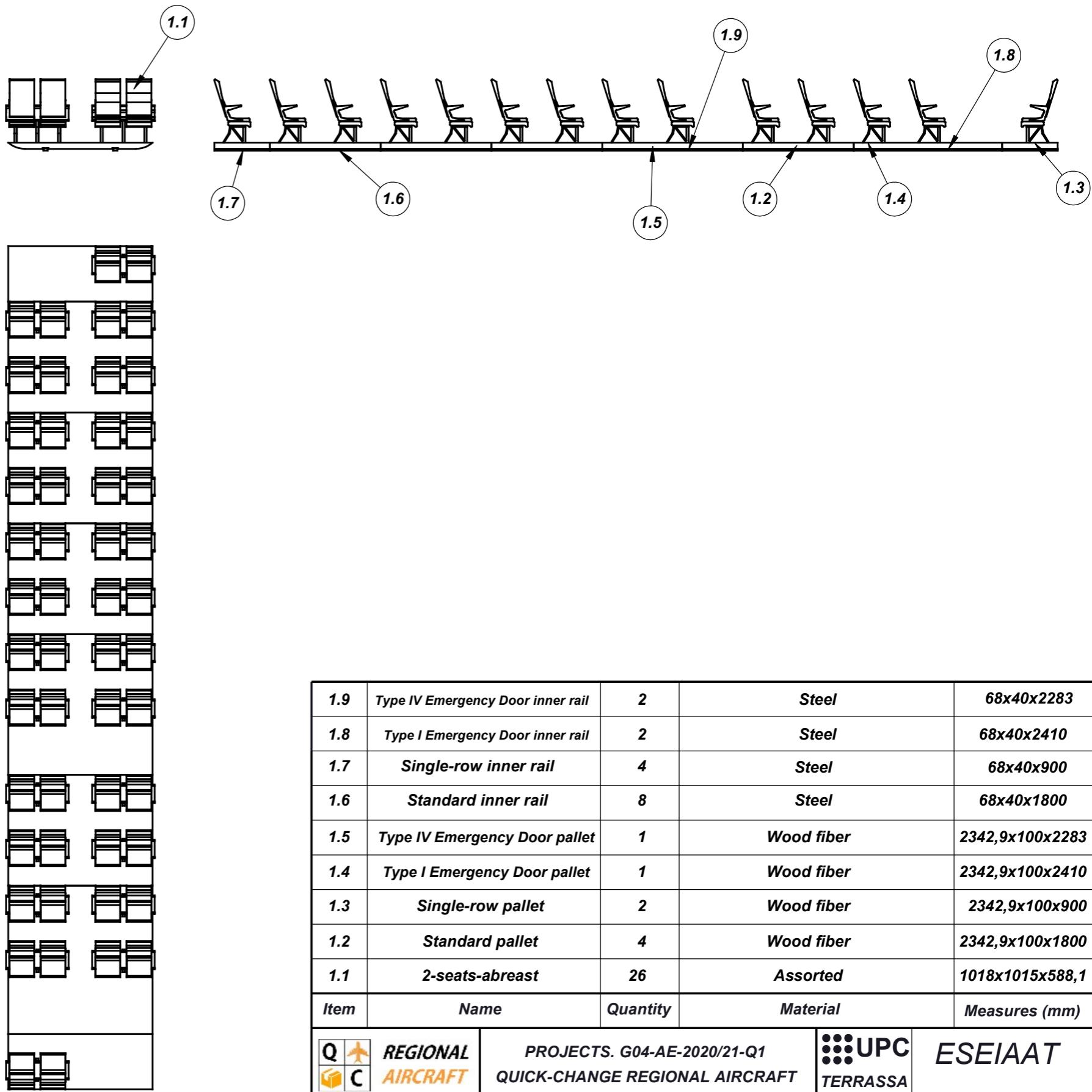
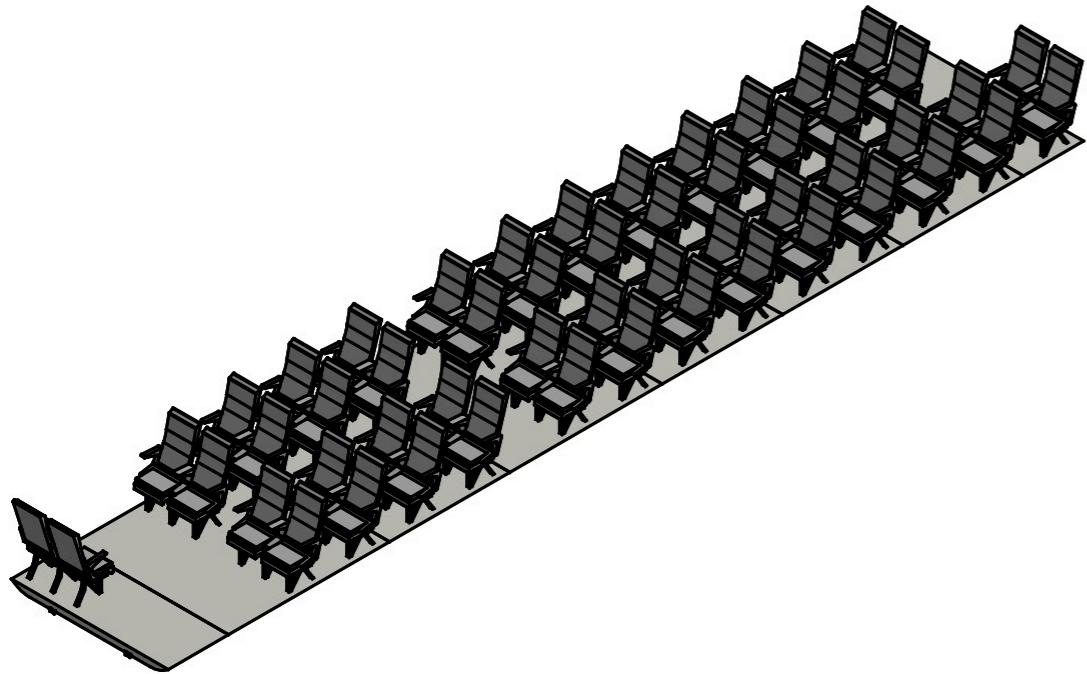
The corresponding subsystem drawing is included in Page D11.

2.8 Type I Emergency Door inner rail

The corresponding subsystem drawing is included in Page D12.

2.9 Type IV Emergency Door inner rail

The corresponding subsystem drawing is included in Page D13.



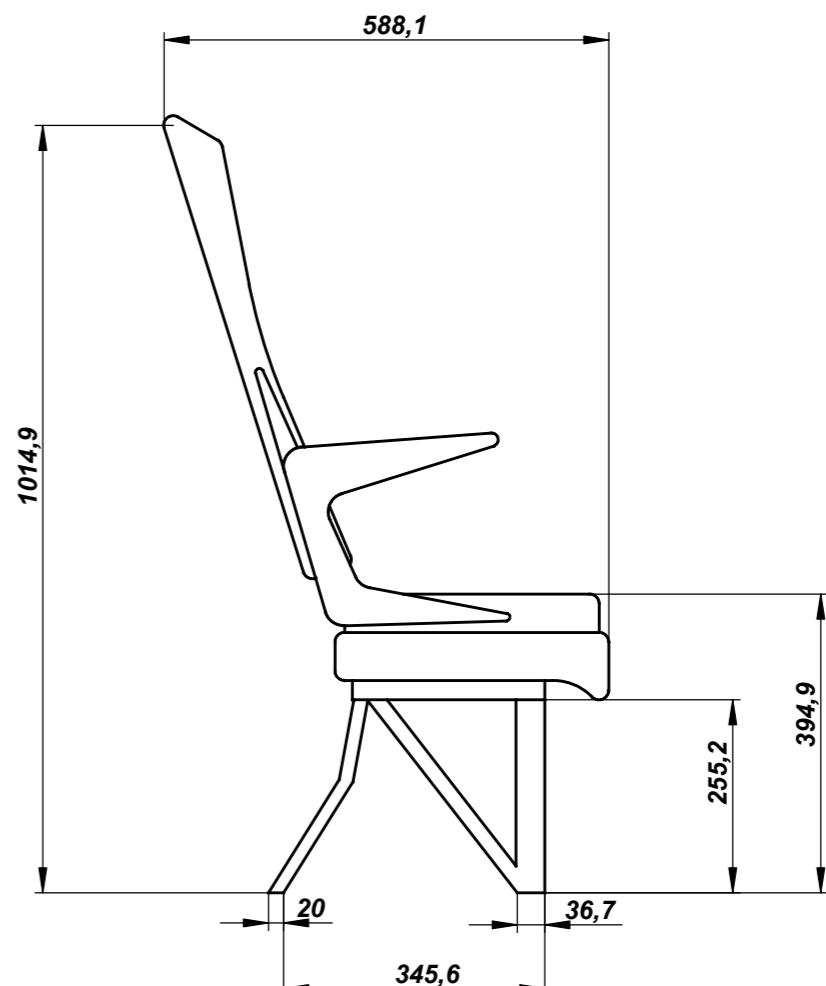
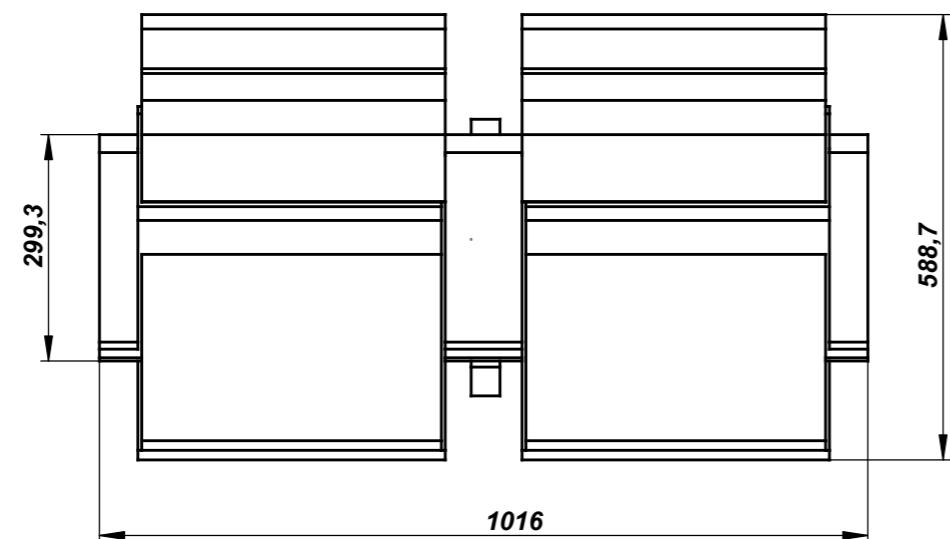
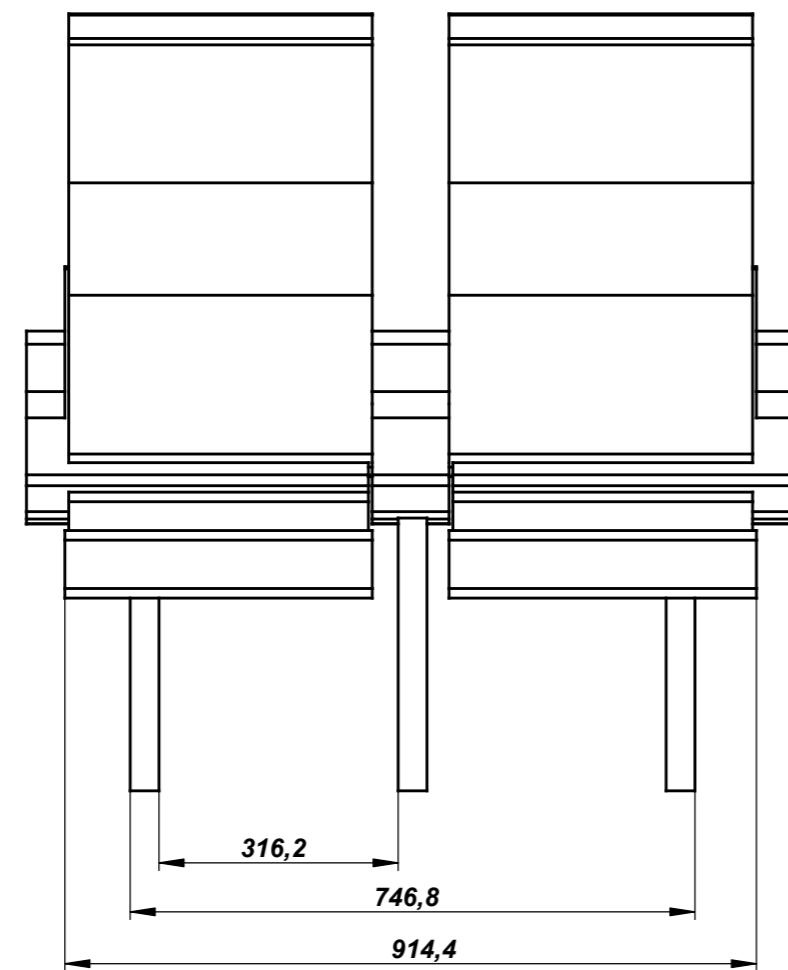
Item	Name	Quantity	Material	Measures (mm)
1.9	Type IV Emergency Door inner rail	2	Steel	68x40x2283
1.8	Type I Emergency Door inner rail	2	Steel	68x40x2410
1.7	Single-row inner rail	4	Steel	68x40x900
1.6	Standard inner rail	8	Steel	68x40x1800
1.5	Type IV Emergency Door pallet	1	Wood fiber	2342,9x100x2283
1.4	Type I Emergency Door pallet	1	Wood fiber	2342,9x100x2410
1.3	Single-row pallet	2	Wood fiber	2342,9x100x900
1.2	Standard pallet	4	Wood fiber	2342,9x100x1800
1.1	2-seats-abreast	26	Assorted	1018x1015x588,1

REGIONAL
AIRCRAFT PROJECTS. G04-AE-2020/21-Q1
 QUICK-CHANGE REGIONAL AIRCRAFT

UPC
 TERRASSA **ESEIAAT**

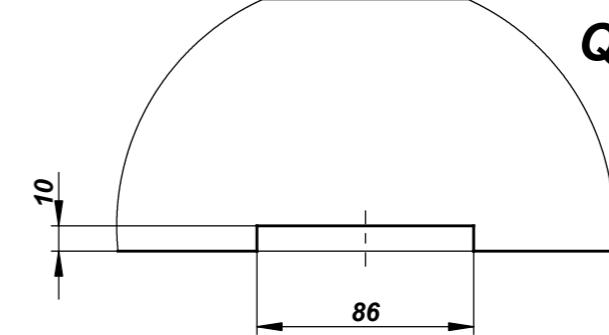
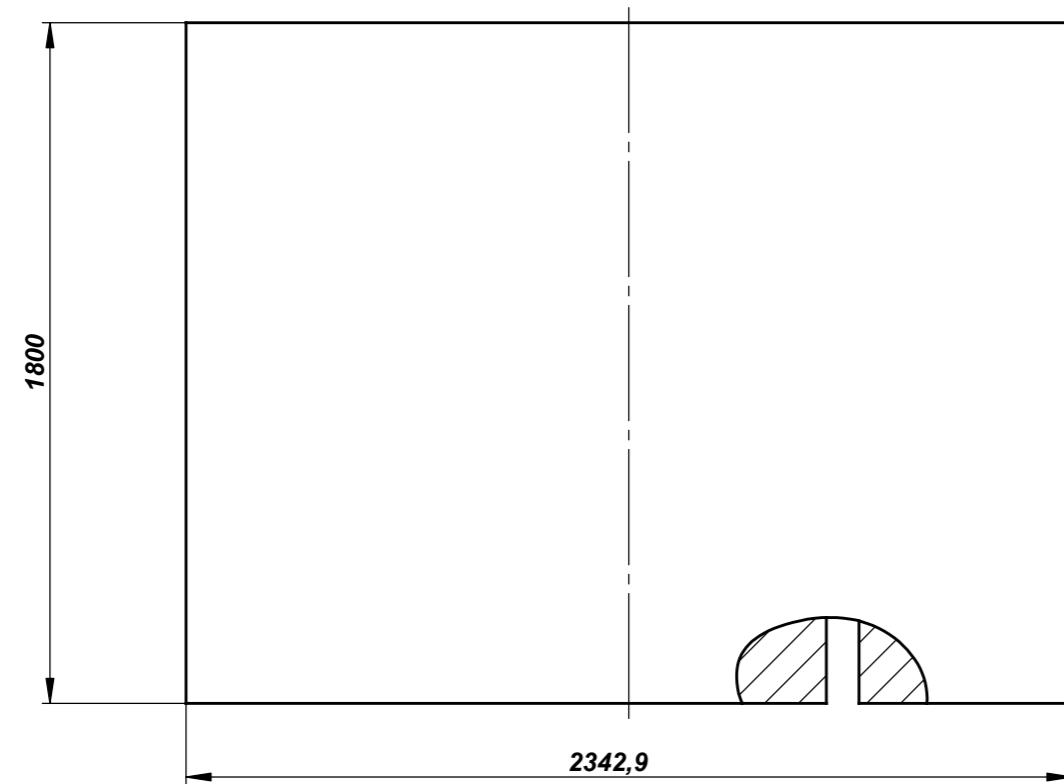
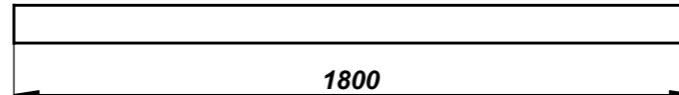
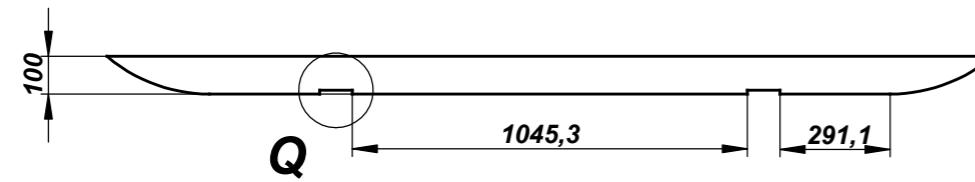
SCALE 1:75	1. PALLETIZED INTERIOR SYSTEM	PAGE D4
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1.1



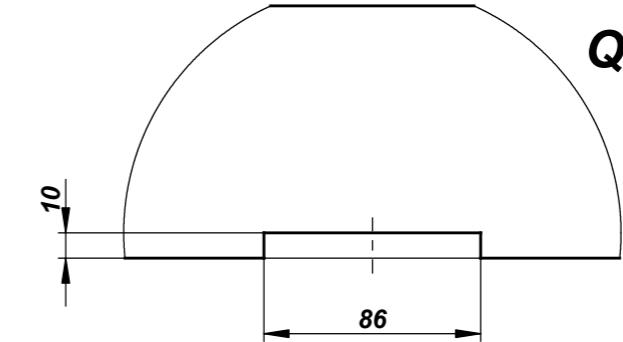
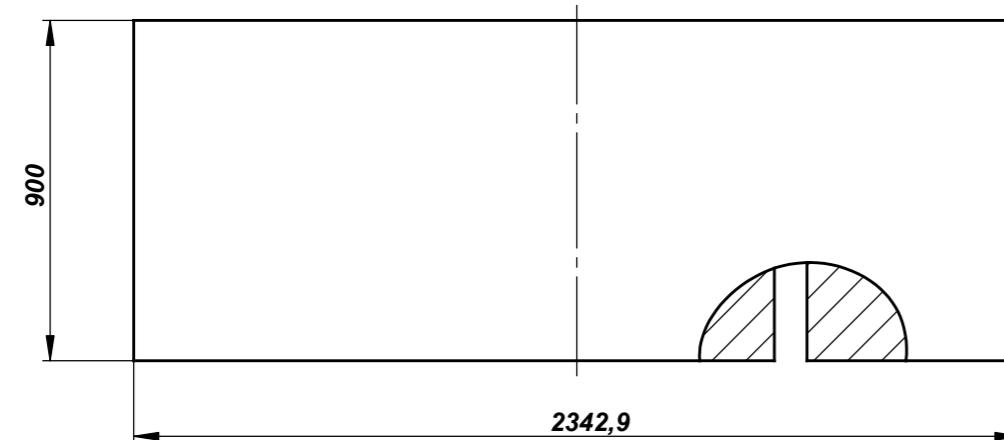
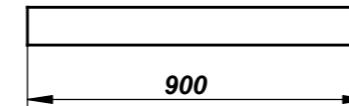
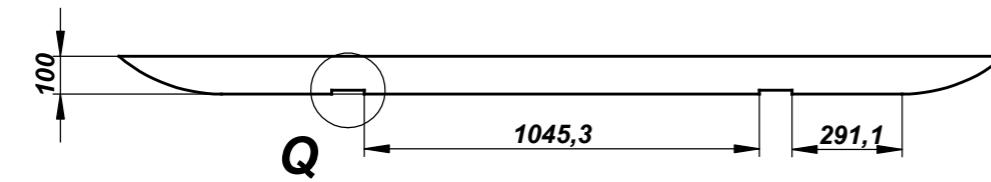
1.1	2-seats-abreast	26	Assorted	1018x1015x588,1
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:10	1. PALLETIZED INTERIOR SYSTEM			PAGE D5

1.2



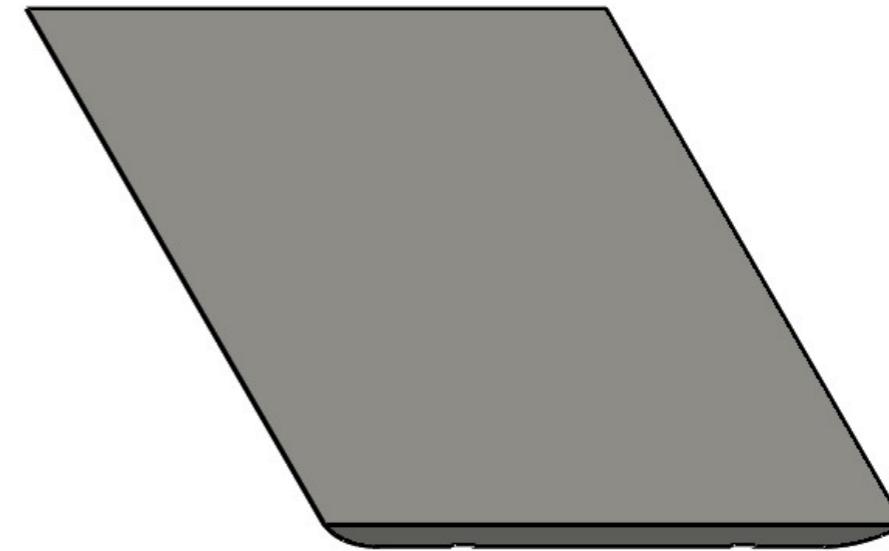
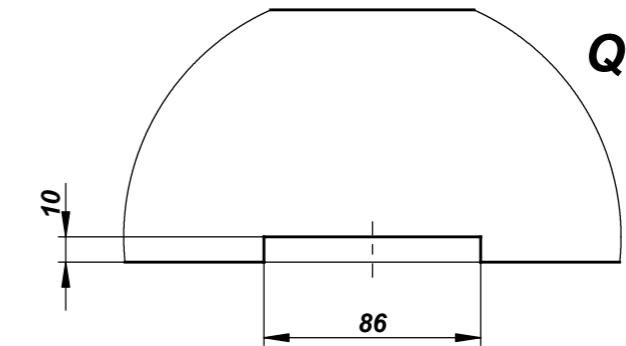
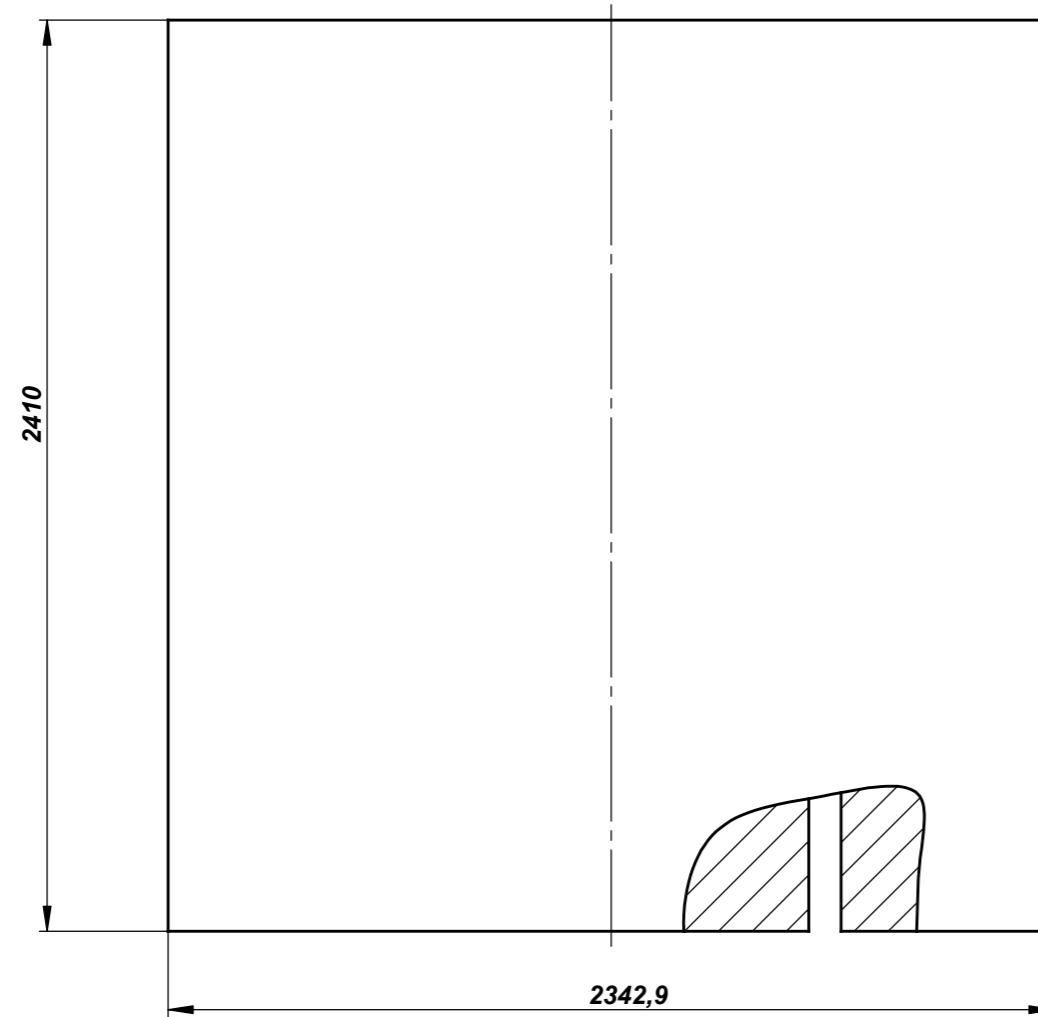
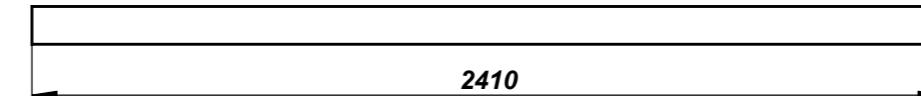
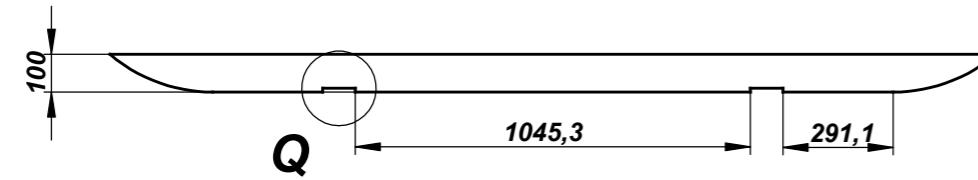
1.2	Standard pallet	4	Wood fiber	2342,9x100x1800
Item	Name	Quantity	Material	Measures (mm)
Q	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:20	1. PALLETIZED INTERIOR SYSTEM			PAGE D6

1.3



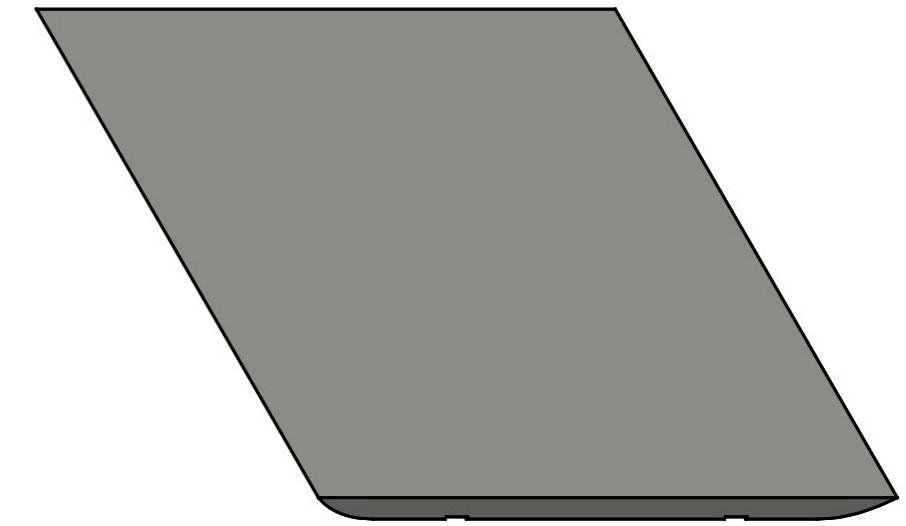
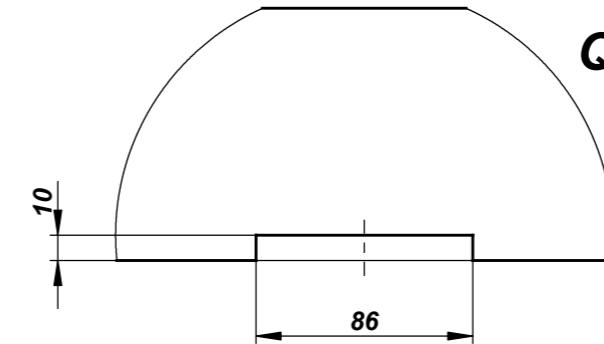
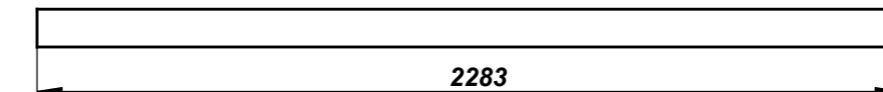
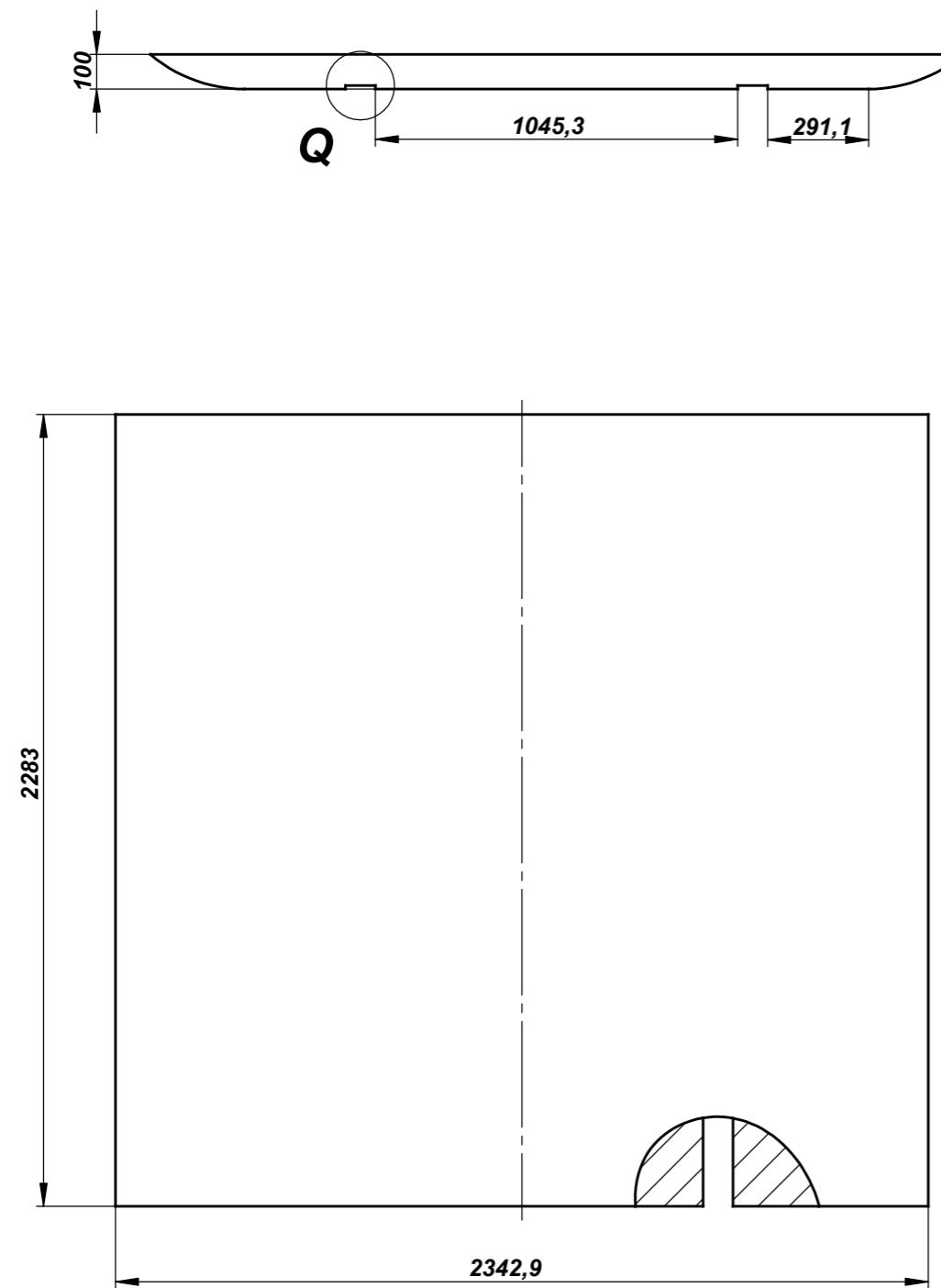
1.3	Single-row pallet	2	Wood fiber	2342,9x100x900
Item	Name	Quantity	Material	Measures (mm)
Q  REGIONAL C  AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC TERRASSA	ESEIAAT
SCALE 1:20	1. PALLETIZED INTERIOR SYSTEM			PAGE D7

1.4



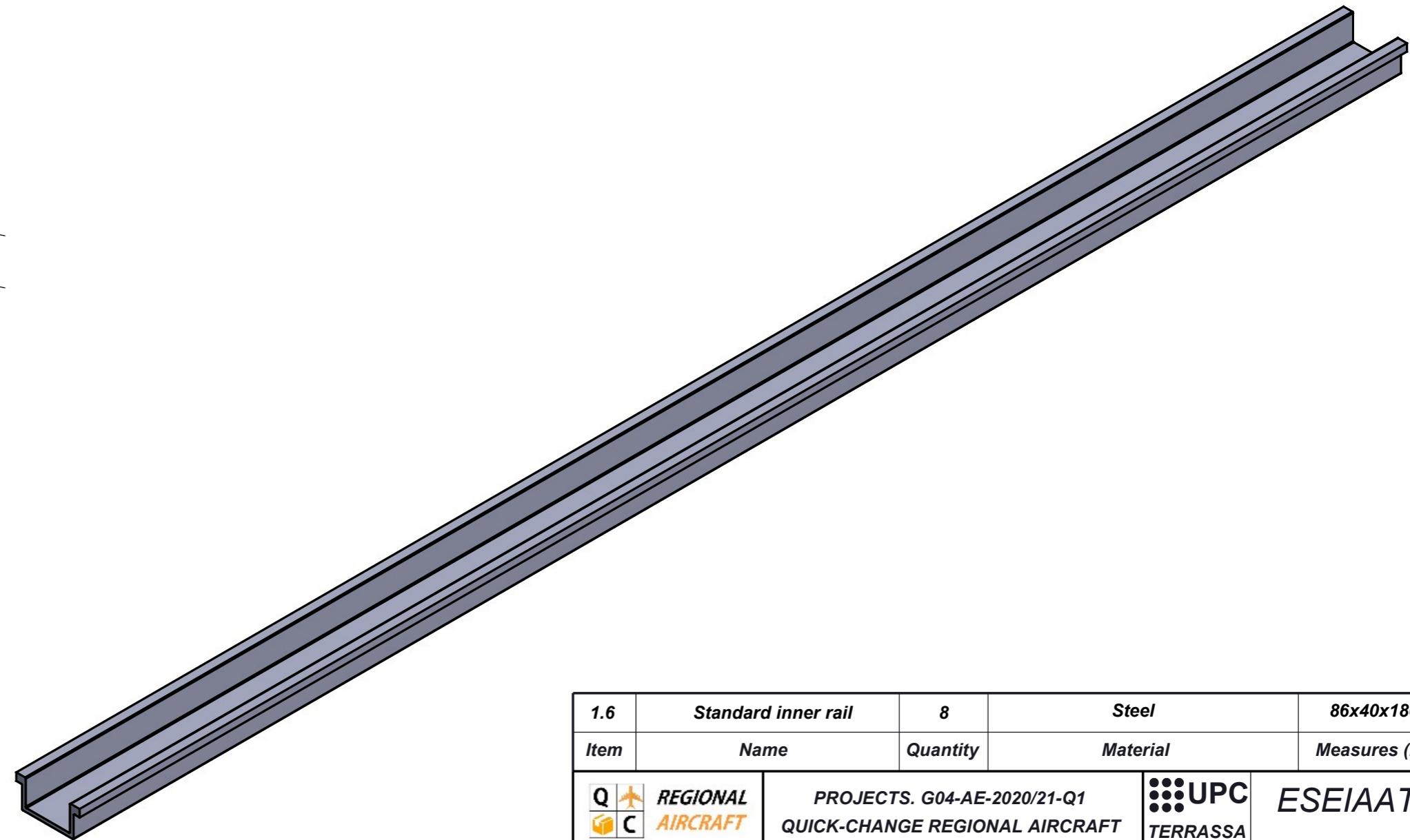
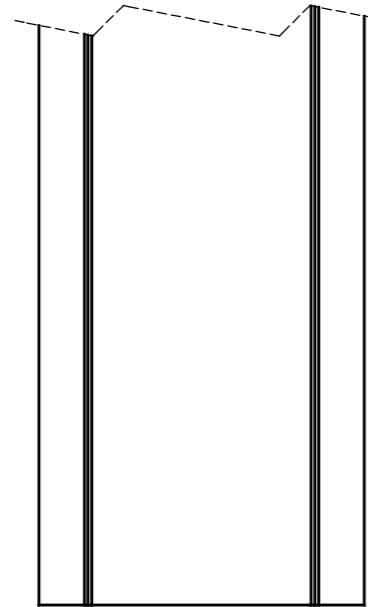
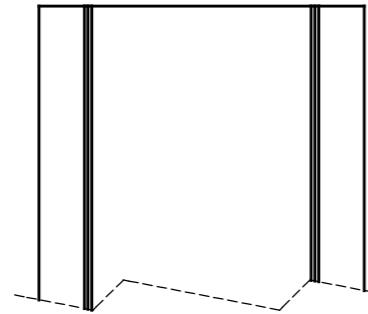
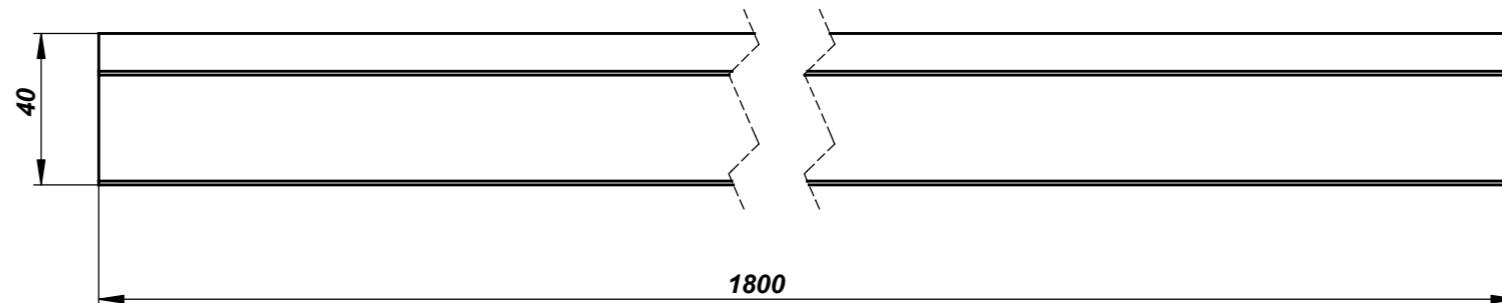
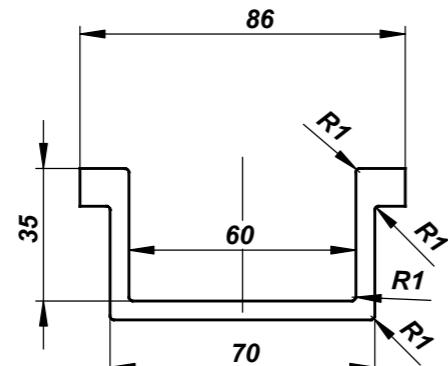
1.4	Type I Emergency Door pallet	1	Wood fiber	2342,9x100x2410
Item	Name	Quantity	Material	Measures (mm)
Q REGIONAL C AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC TERRASSA	ESEIAAT
SCALE 1:20	1. PALLETIZED INTERIOR SYSTEM			PAGE D8

1.5



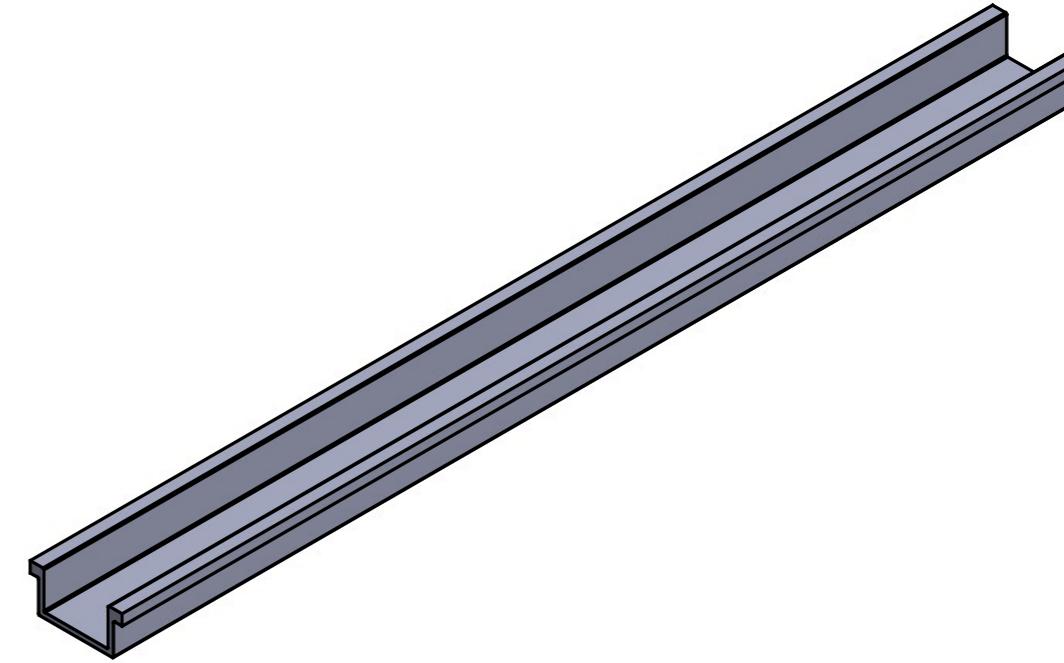
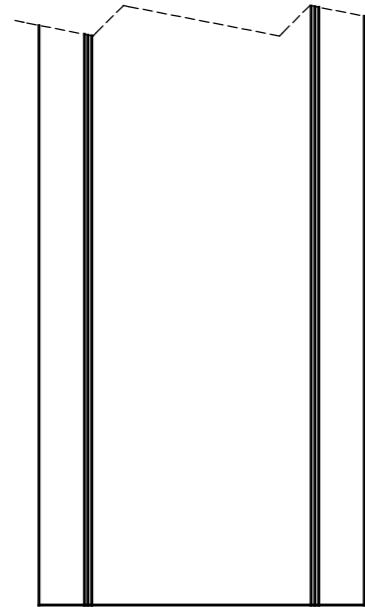
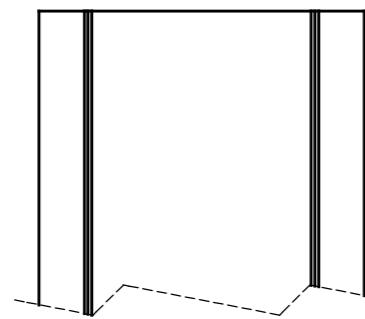
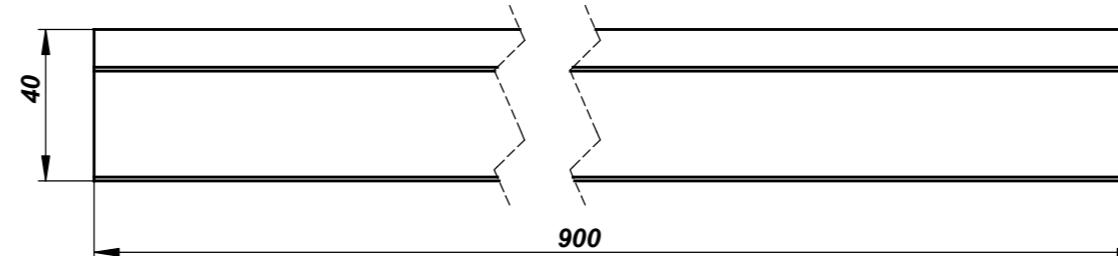
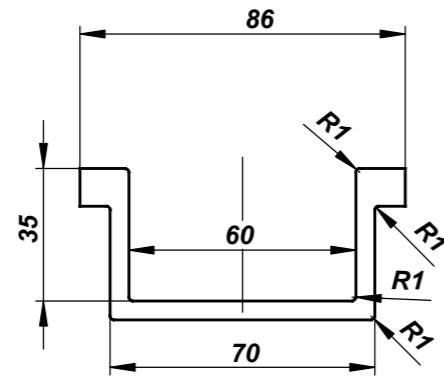
1.5	Type IV Emergency Door pallet	1	Wood fiber	2342,9x100x2283
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:20	1. PALLETIZED INTERIOR SYSTEM			PAGE D9

1.6



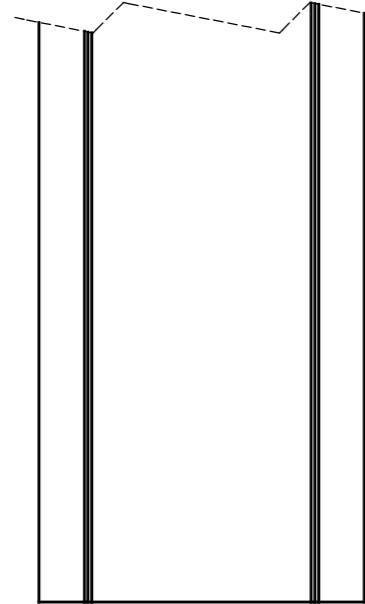
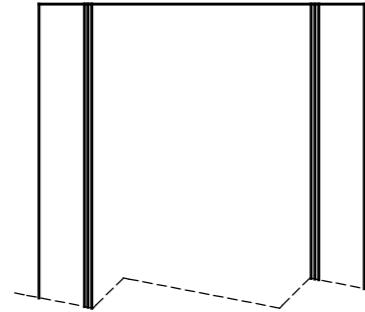
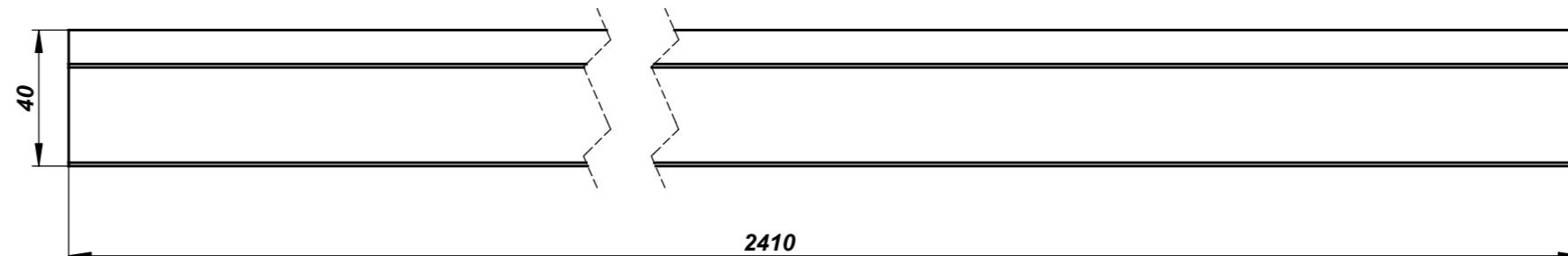
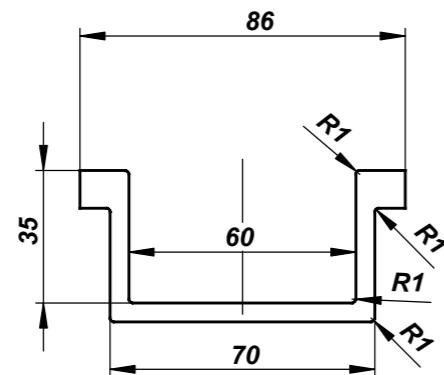
1.6	Standard inner rail	8	Steel	86x40x1800
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:2			PAGE D10	
1. PALLETIZED INTERIOR SYSTEM				

1.7



1.7	Single-row inner rail	4	Steel	86x40x900
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:2	1. PALLETIZED INTERIOR SYSTEM			PAGE D11

1.8

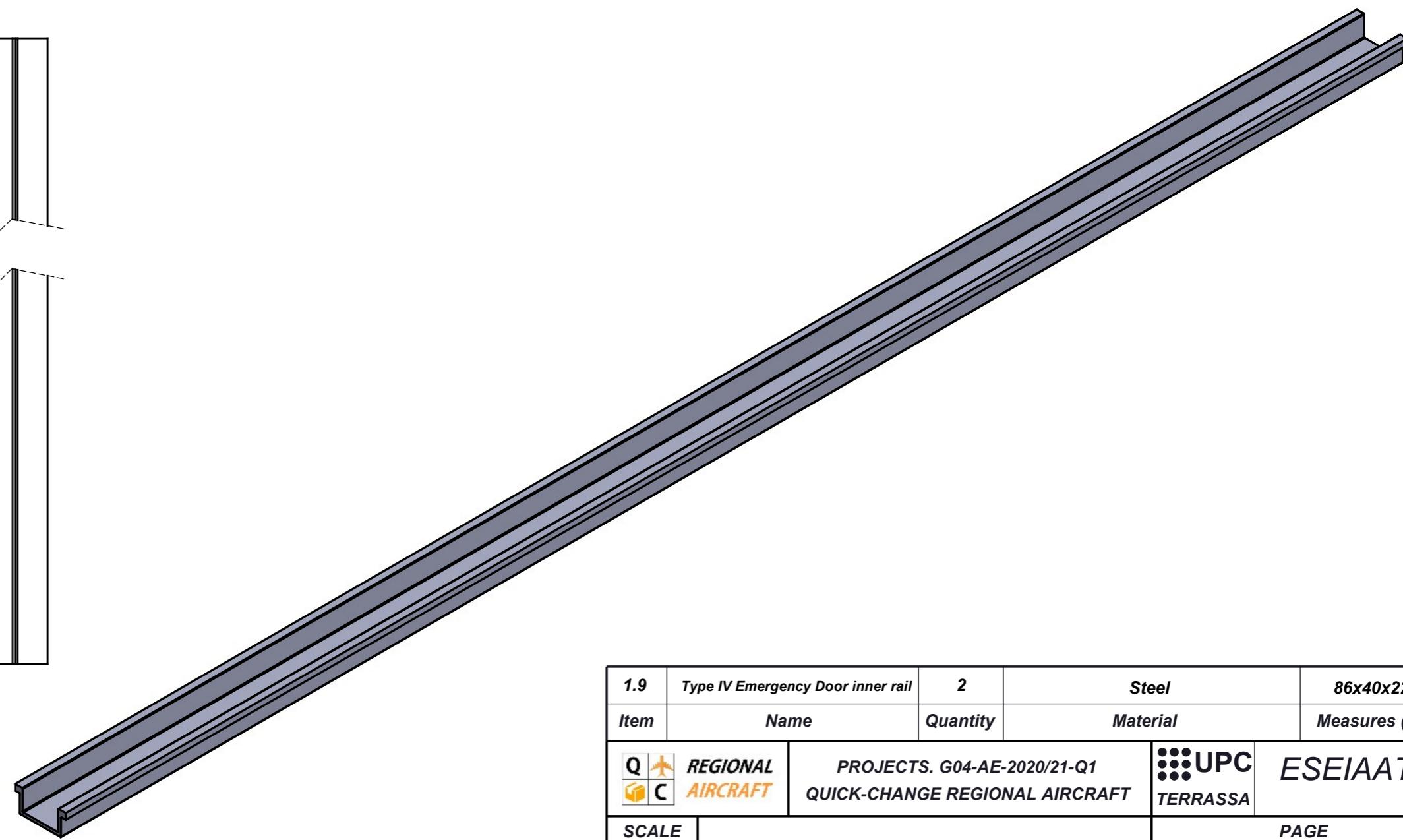
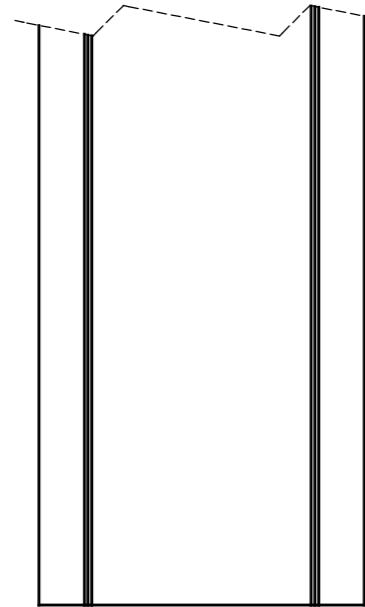
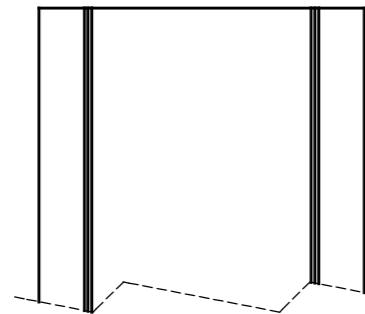
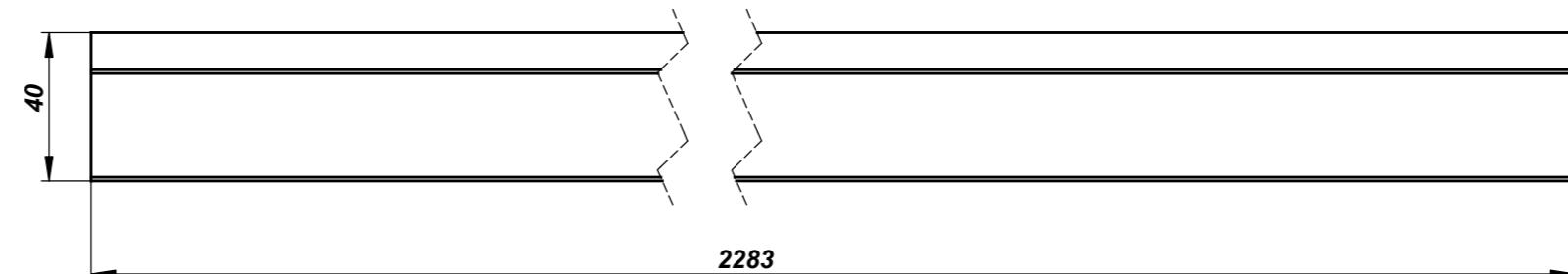
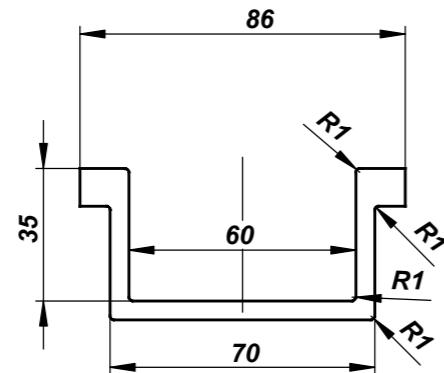


1.8	Type I Emergency Door inner rail	2	Steel	86x40x2410
Item	Name	Quantity	Material	Measures (mm)

Q REGIONAL C AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
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SCALE 1:2	1. PALLETIZED INTERIOR SYSTEM	PAGE D12
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1.9



1.9	Type IV Emergency Door inner rail	2	Steel	86x40x2283
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:2	1. PALLETIZED INTERIOR SYSTEM			PAGE D13

3 Fuselage

The fuselage system assembly drawing is added in Page D15.

3.1 Fuselage frame

The corresponding subsystem drawing is included in Page D16.

3.2 Fuselage longeron

The corresponding subsystem drawing is included in Page D17.

3.3 Lavatory module

The corresponding subsystem drawing is included in Page D18.

3.4 Belly holds structure

The corresponding subsystem drawing is included in Page D19.

3.5 Passenger access door

The corresponding subsystem drawing is included in Page D20.

3.6 Type I Emergency door

The corresponding subsystem drawing is included in Page D21.

3.7 Type IV Emergency door

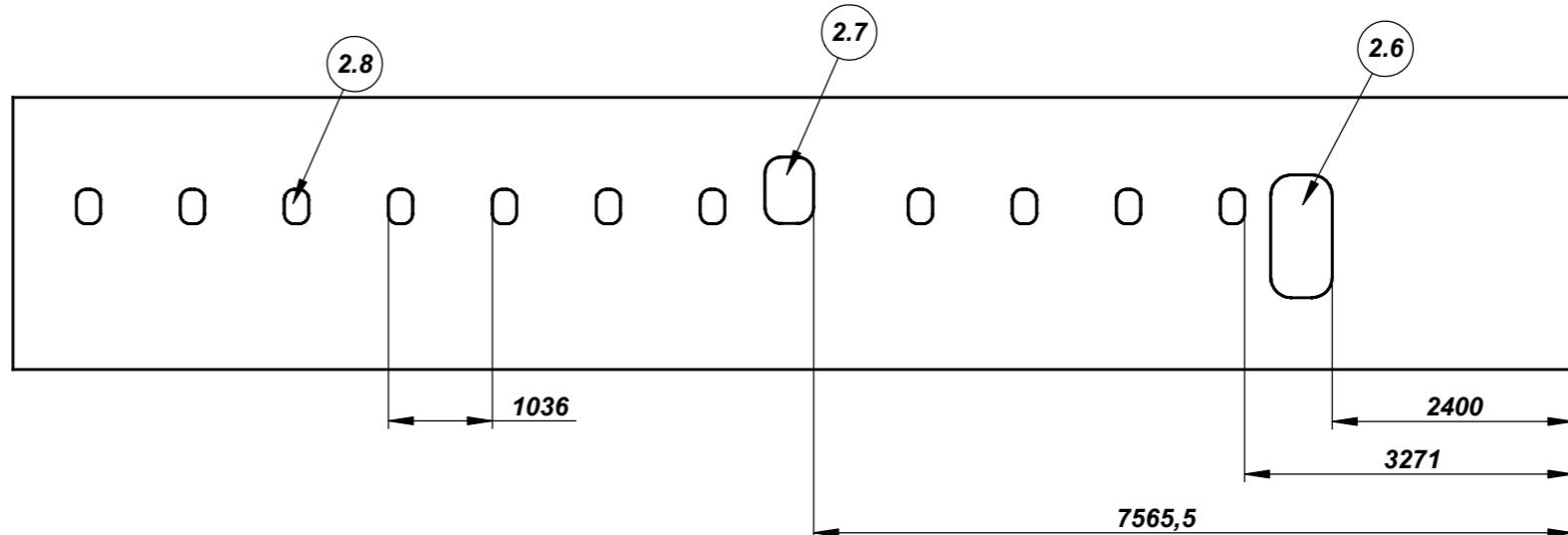
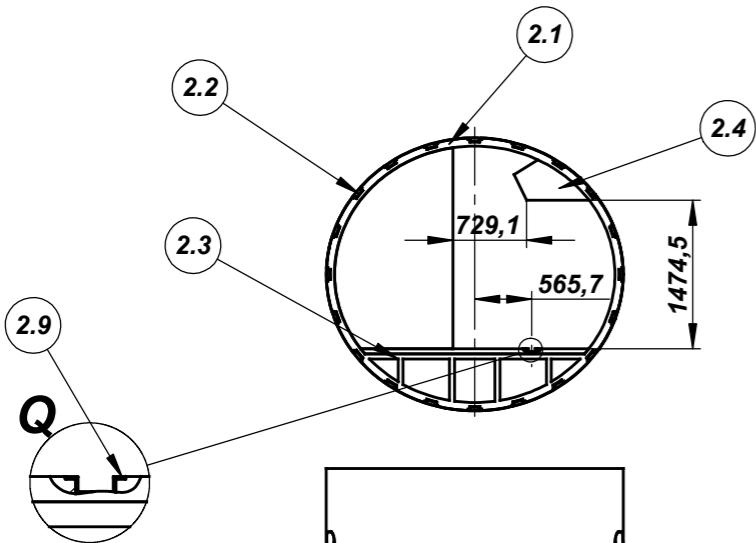
The corresponding subsystem drawing is included in Page D22.

3.8 Window

The corresponding subsystem drawing is included in Page D23.

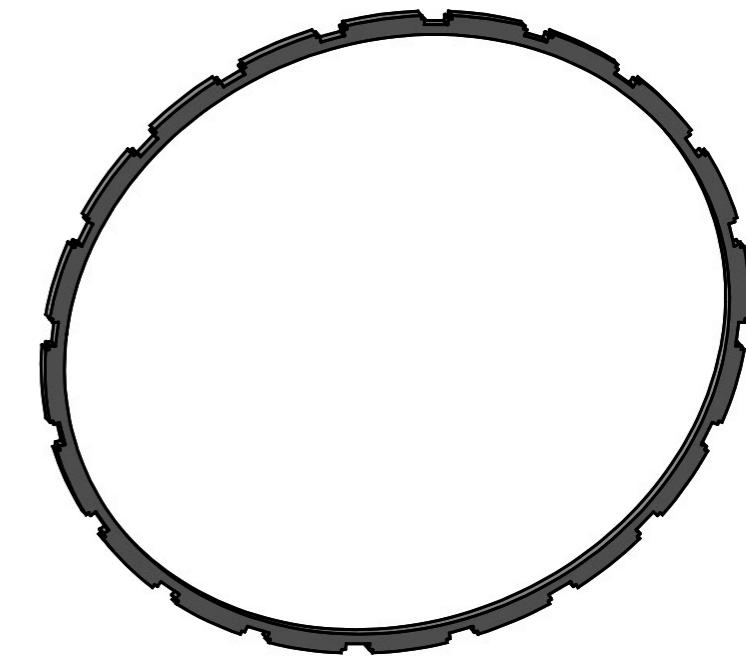
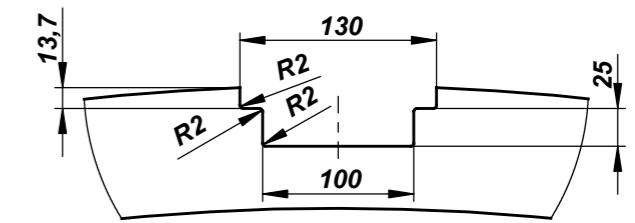
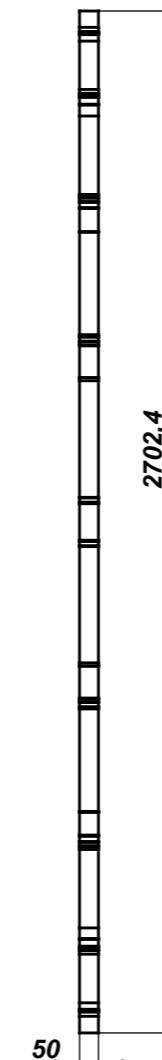
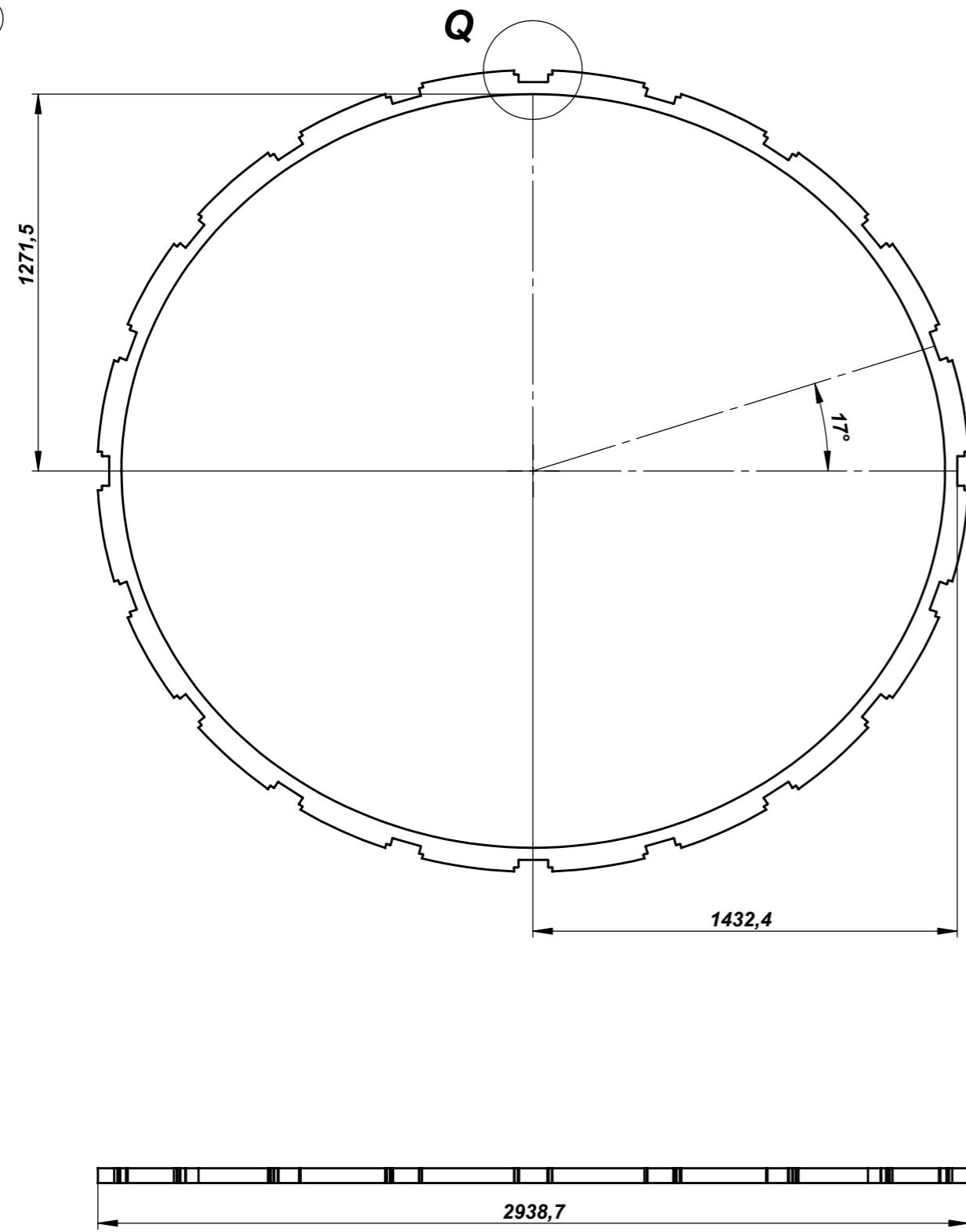
3.9 Fuselage outer rail

The corresponding subsystem drawing is included in Page D24.



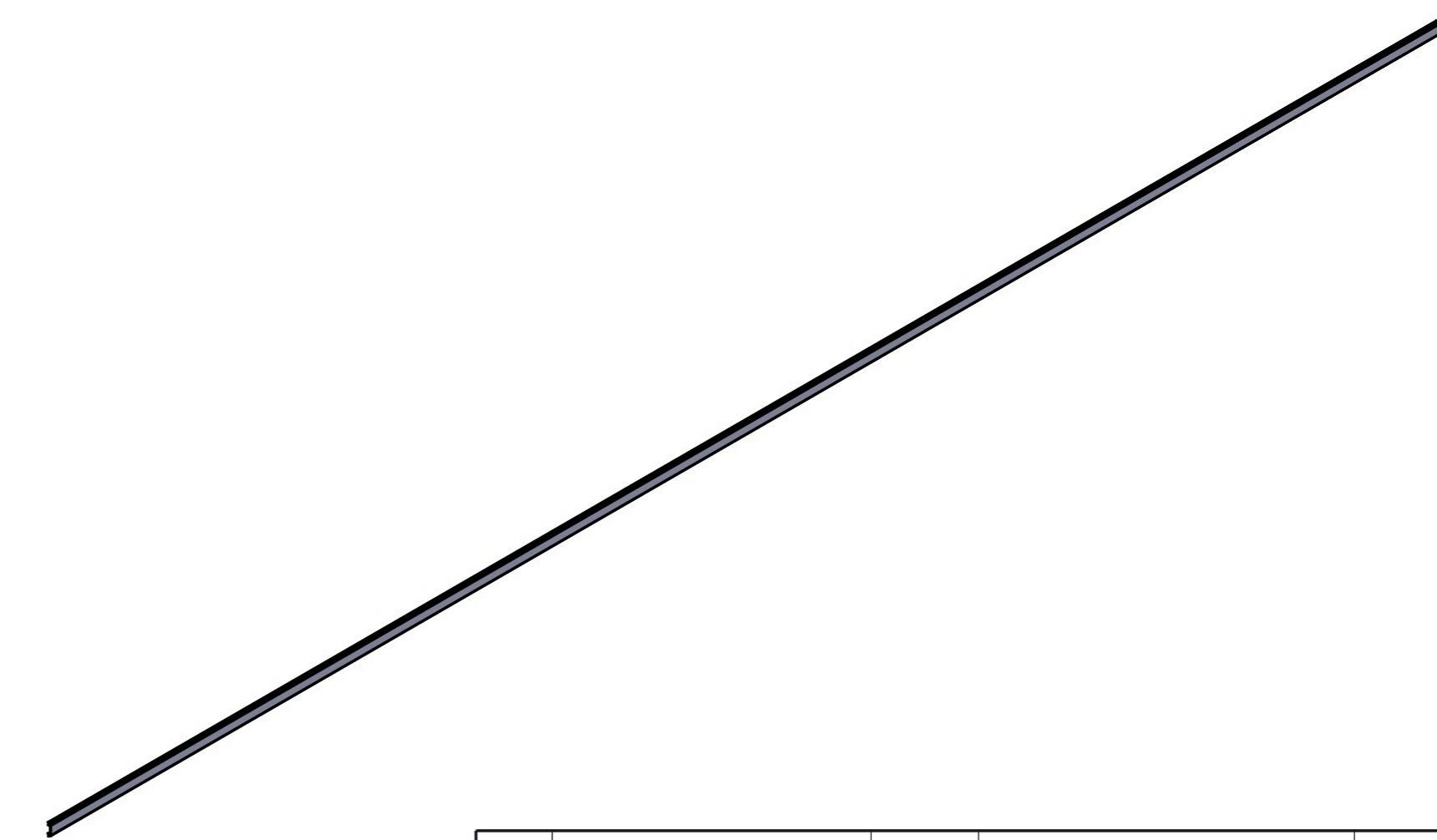
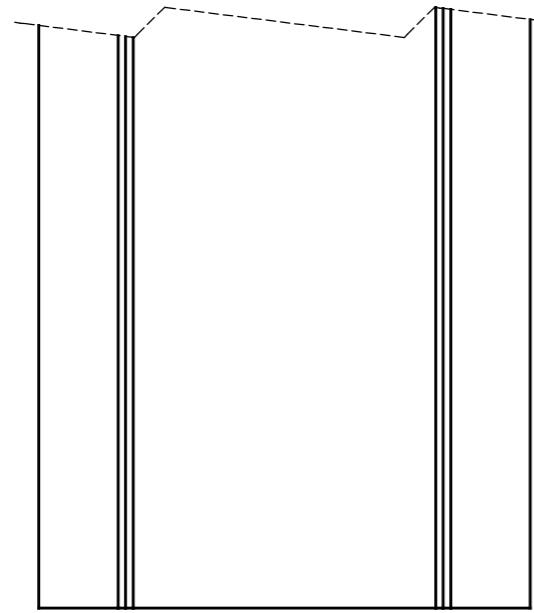
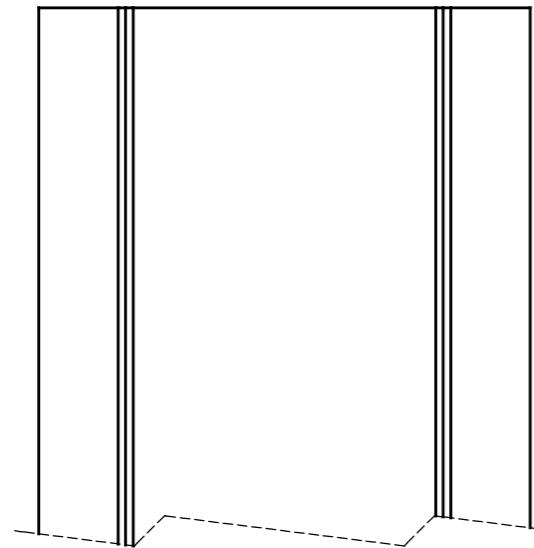
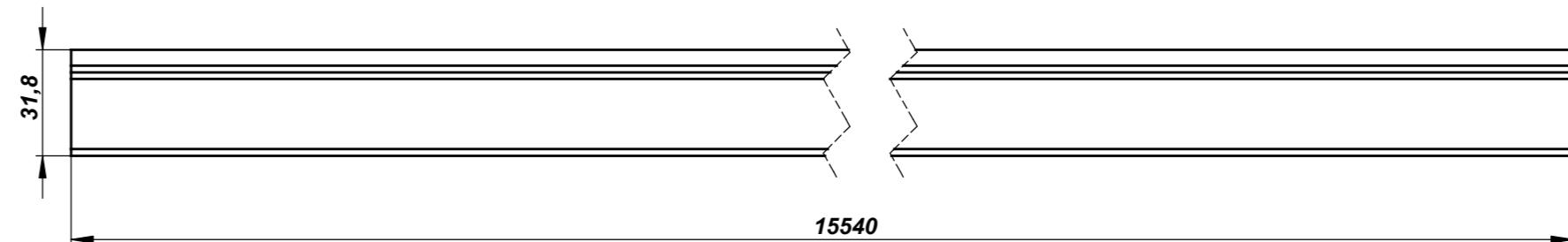
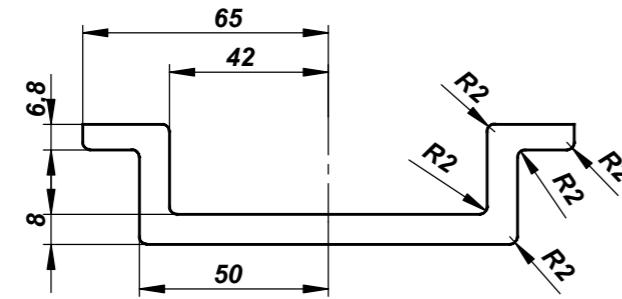
2.9	<i>Fuselage outer rail</i>	2	<i>Steel</i>	120x35x14040
2.8	<i>Window</i>	22	<i>Polymer</i>	242x343x162,6
2.7	<i>Type IV Emergency door</i>	2	<i>Carbon fiber</i>	483x661x352,3
2.6	<i>Type I Emergency door</i>	2	<i>Carbon fiber</i>	610x1220x269,2
2.5	<i>Passenger access door</i>	1	<i>Carbon fiber</i>	915x1830x757,8
2.4	<i>Belly holds structure</i>	2	<i>Assorted</i>	620,7x399,2x14140
2.3	<i>Lavatory module</i>	1	<i>Assorted</i>	1173,7x1994,7x1400
2.2	<i>Fuselage longeron</i>	20	<i>Al 7075 - T 651</i>	130x31,8x15540
2.1	<i>Fuselage frame</i>	30	<i>Al 7075 - T 651</i>	2938,7x2702,4x5
Item	Name	Quantity	Material	Measures (mm)
Q	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:75	2. FUSELAGE			PAGE D15

2.1



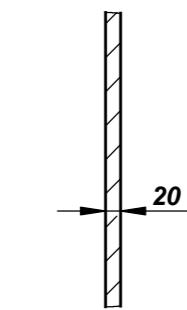
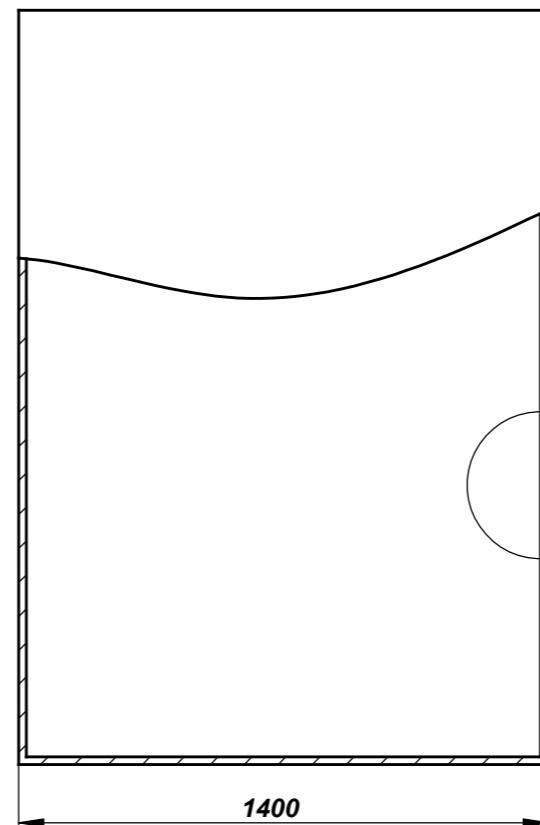
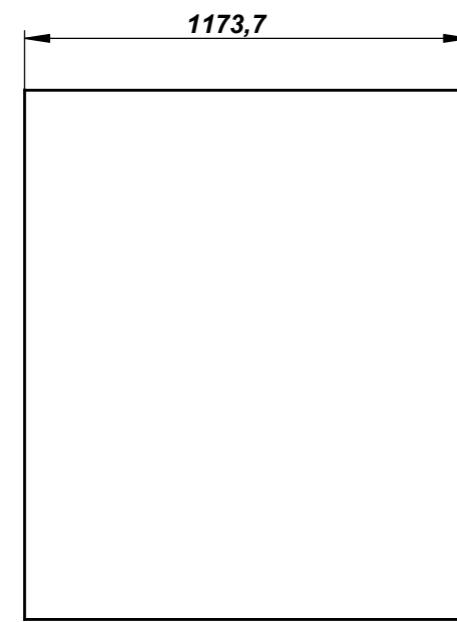
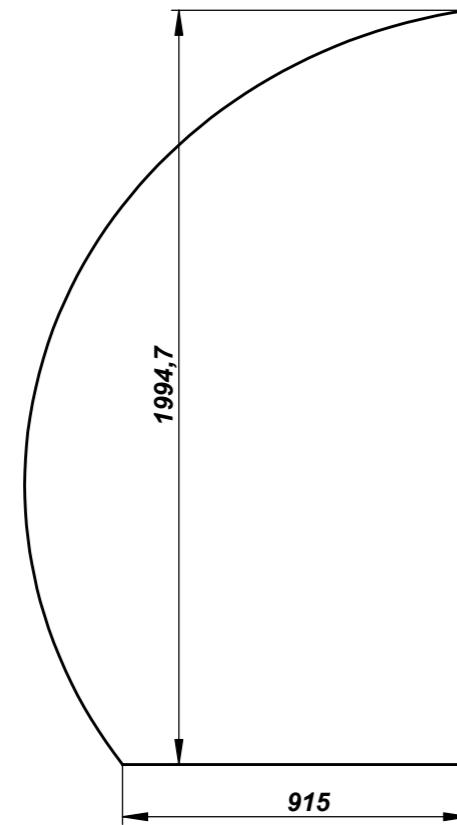
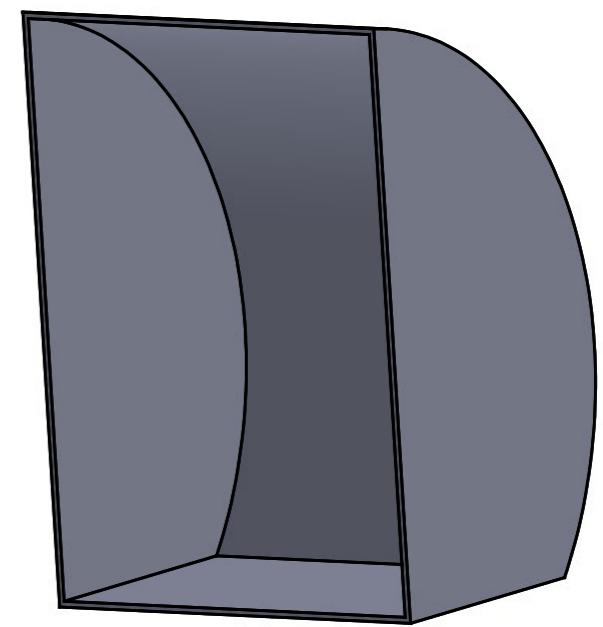
2.1	Fuselage frame	30	AI 7075 - T 651	2938,7x2702,4x5
Item	Name	Quantity	Material	Measures (mm)
Q	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1	UPC TERRASSA	ESEIAAT
C	QUICK-CHANGE REGIONAL AIRCRAFT			
SCALE 1:20	2. FUSELAGE			PAGE D16

2.2



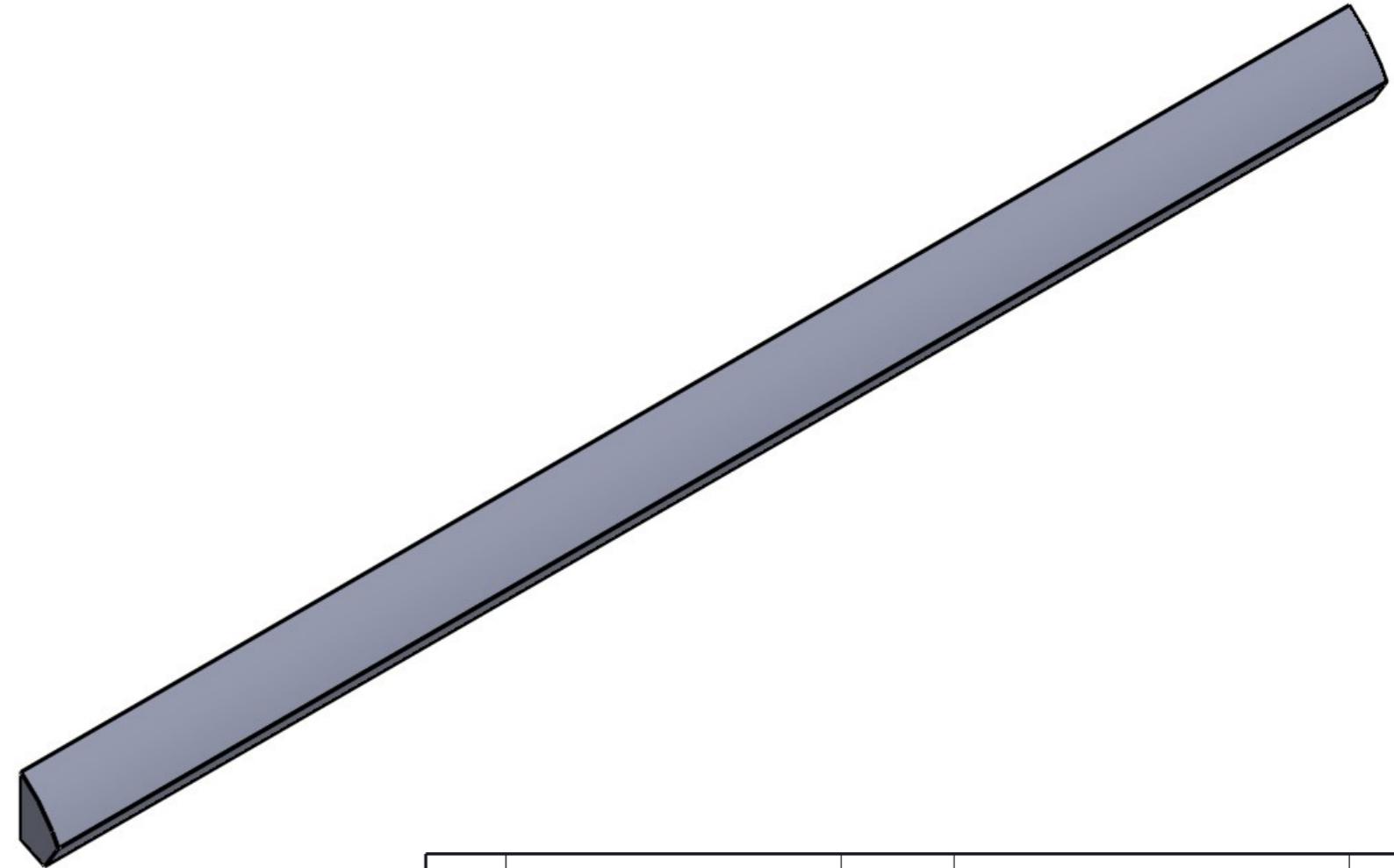
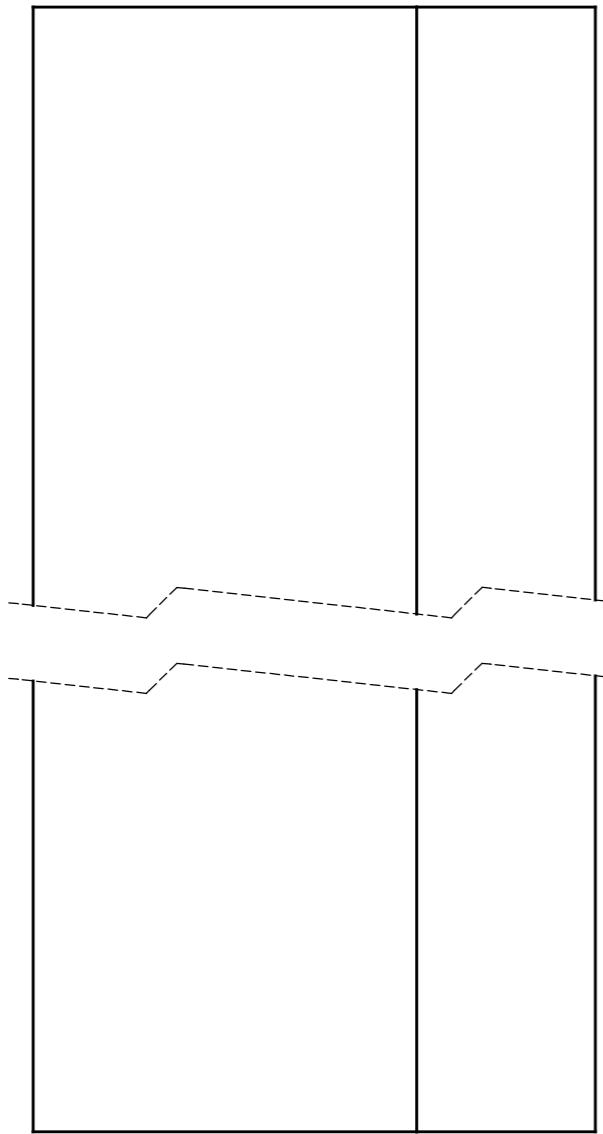
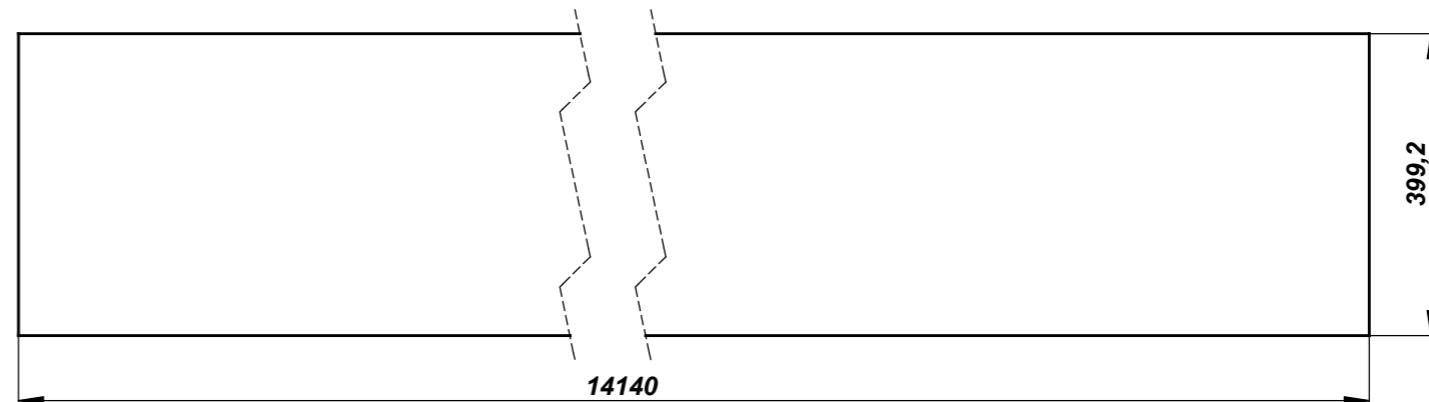
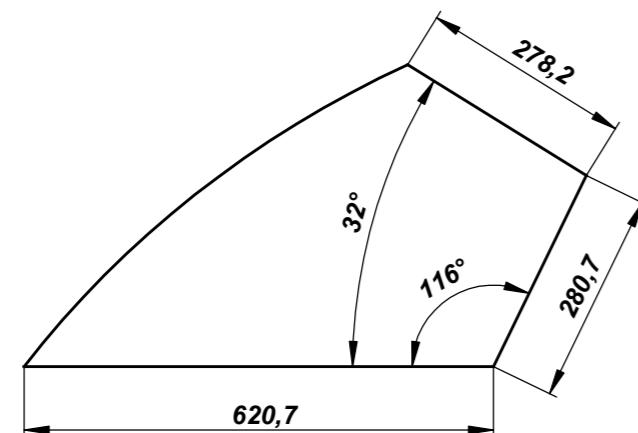
2.2	Fuselage longeron	20	AI 7075-T651	130x31,8x15540
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:2			PAGE D17	
2. FUSELAGE				

2.3

**S**

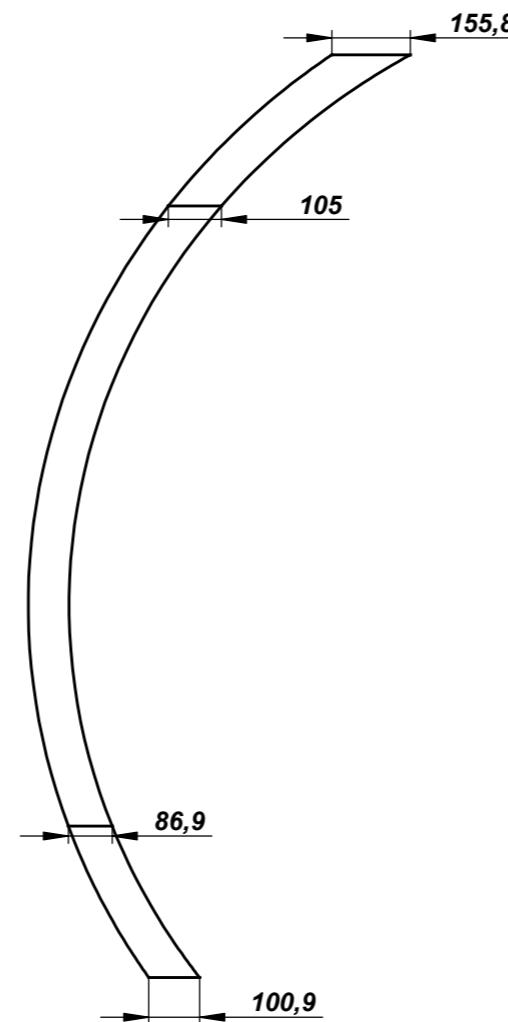
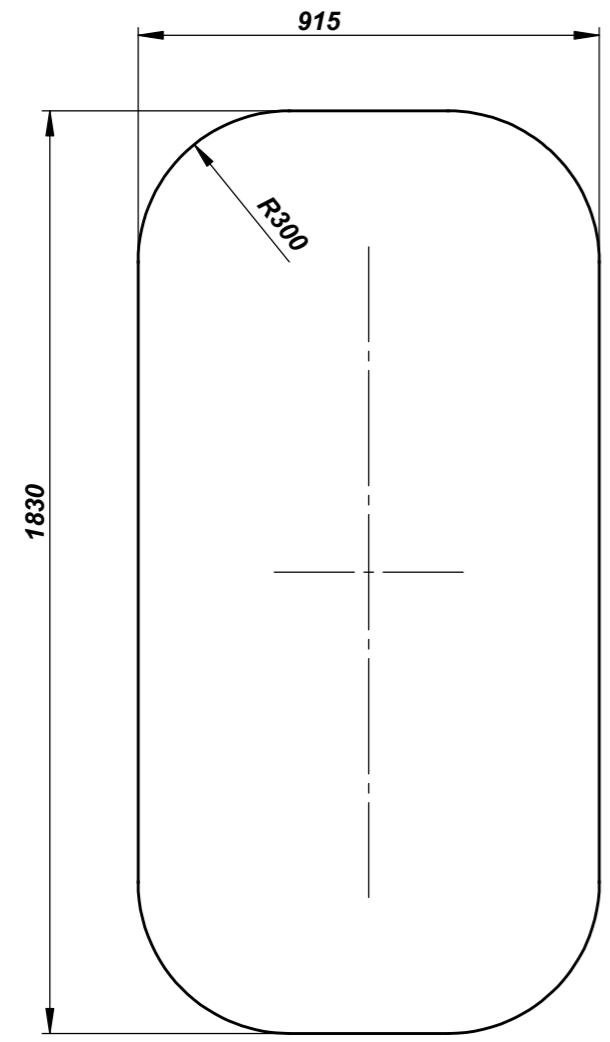
2.3	Lavatory module	1	Assorted	1173,7x1994,7x1400
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		
UPC TERRASSA		ESEIAAT		
SCALE 1:20	2. FUSELAGE			PAGE D18

2.4

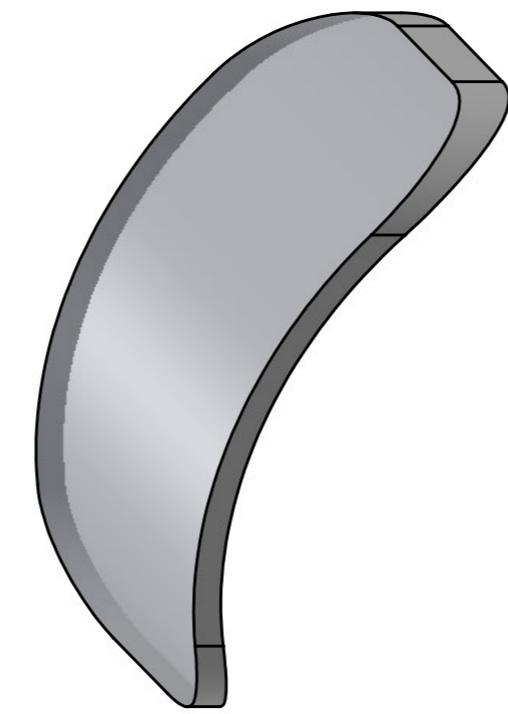
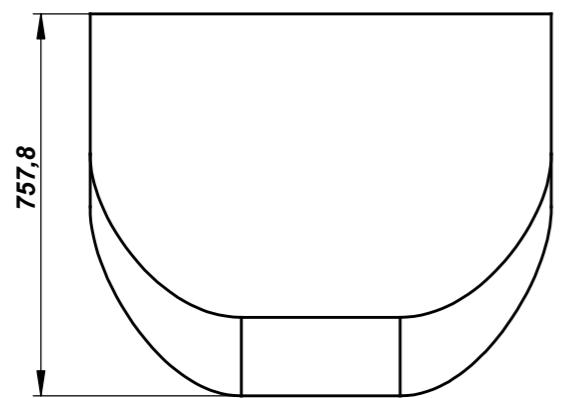
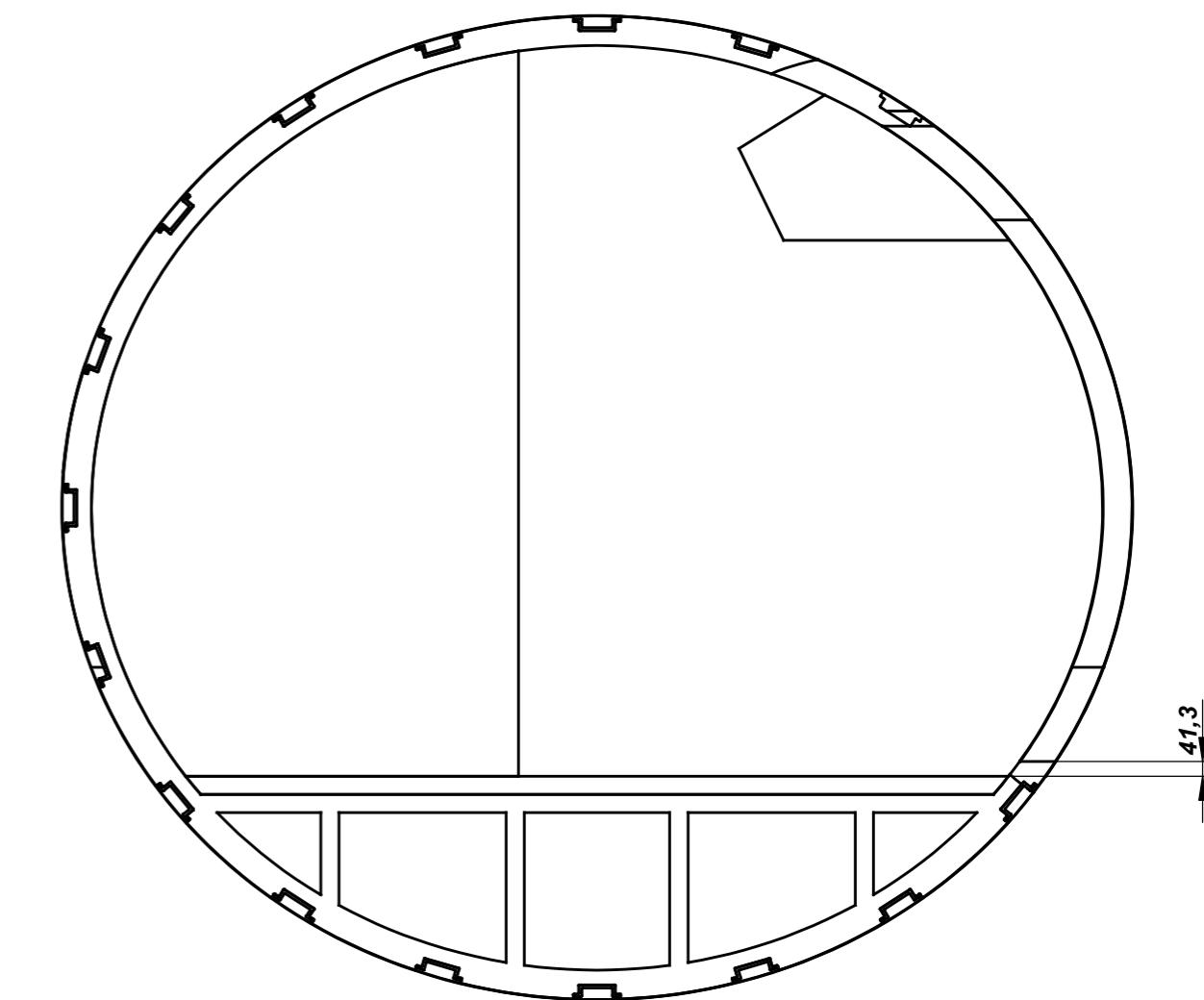


2.4	Belly holds structure	2	Assorted	620,7x399,2x14140
Item	Name	Quantity	Material	Measures (mm)
Q C	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC	ESEIAAT
SCALE 1:10	2. FUSELAGE	PAGE D19		

2.5

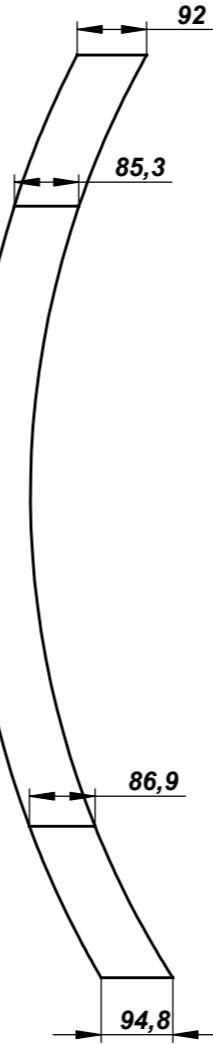
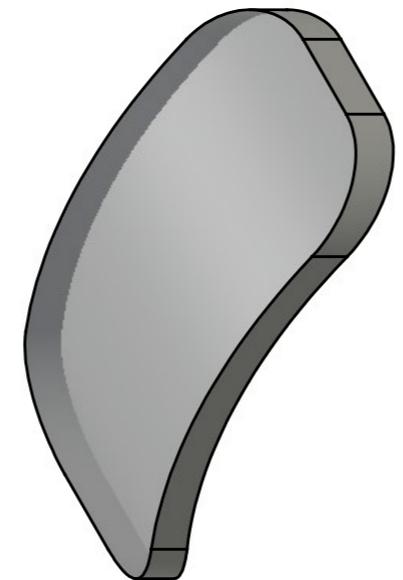
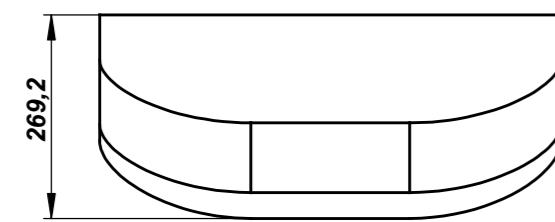
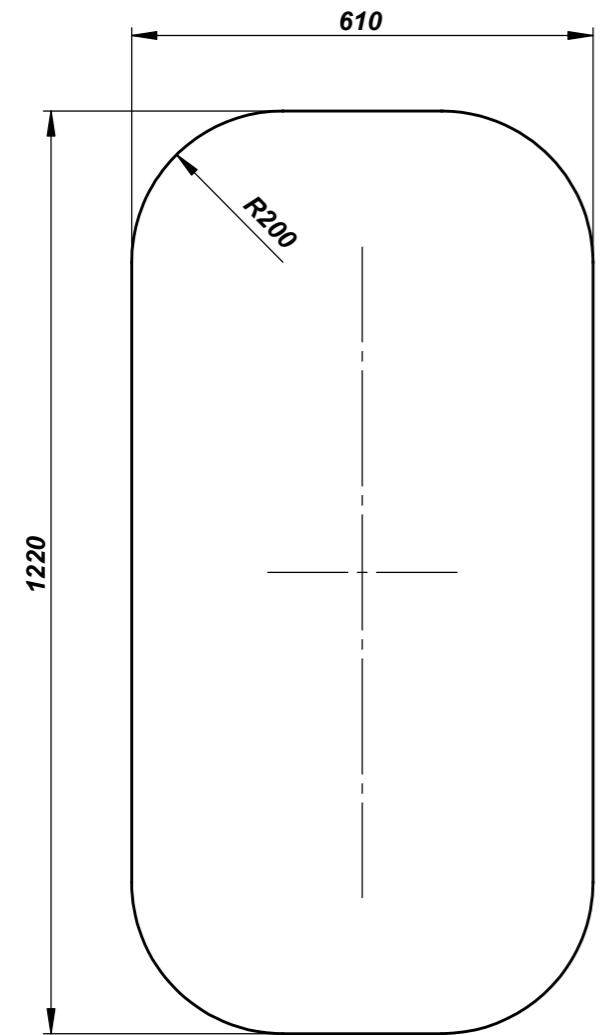
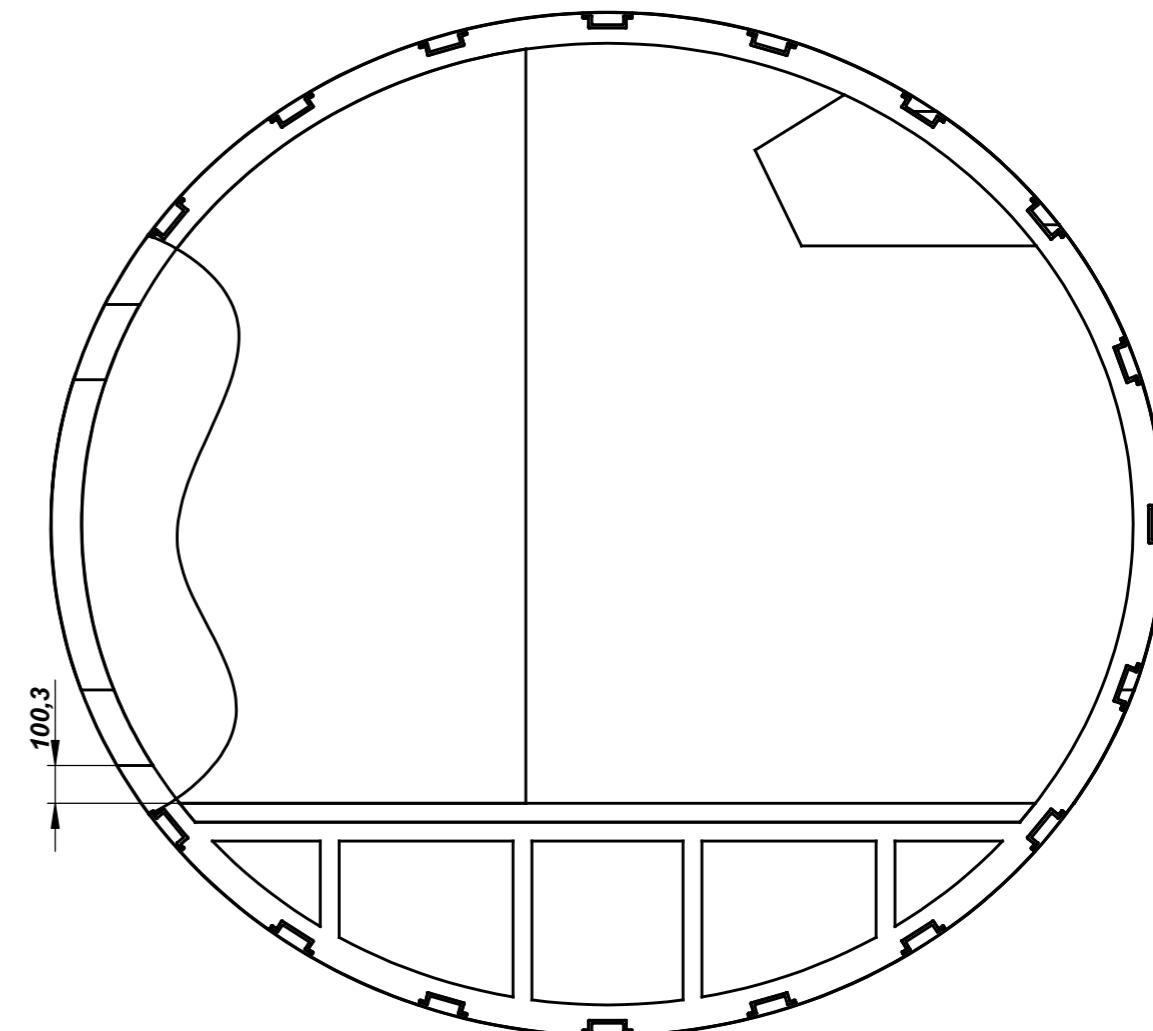


Vertical position



2.5	Passenger access door	1	Carbon fiber	915x1830x757,8
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		
			UPC TERRASSA	ESEIAAT
SCALE 1:15	2. FUSELAGE			PAGE D20

2.6

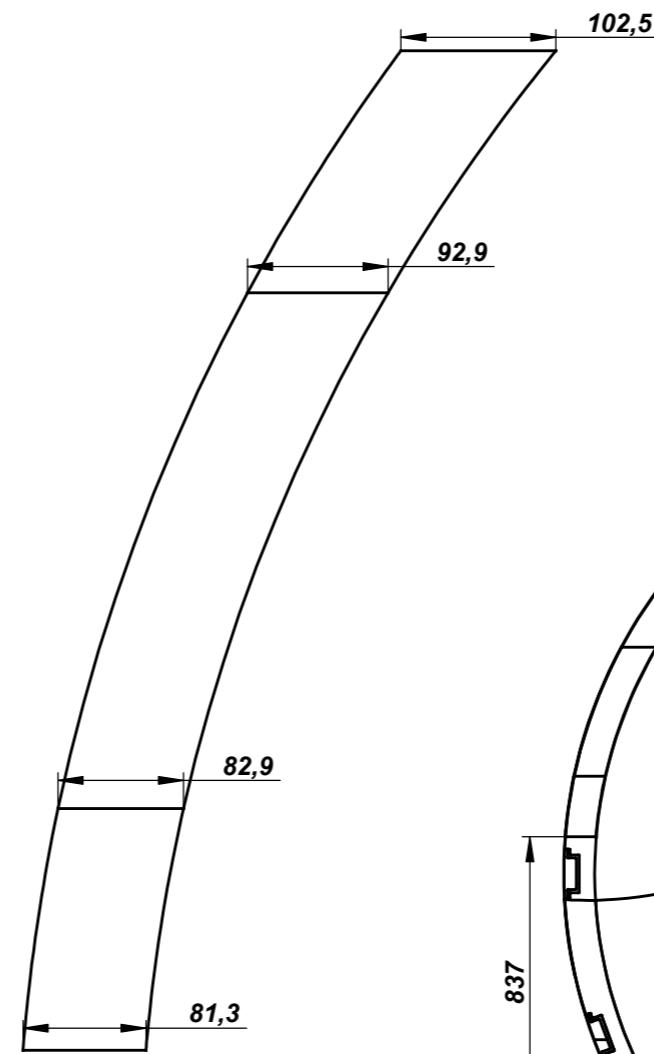
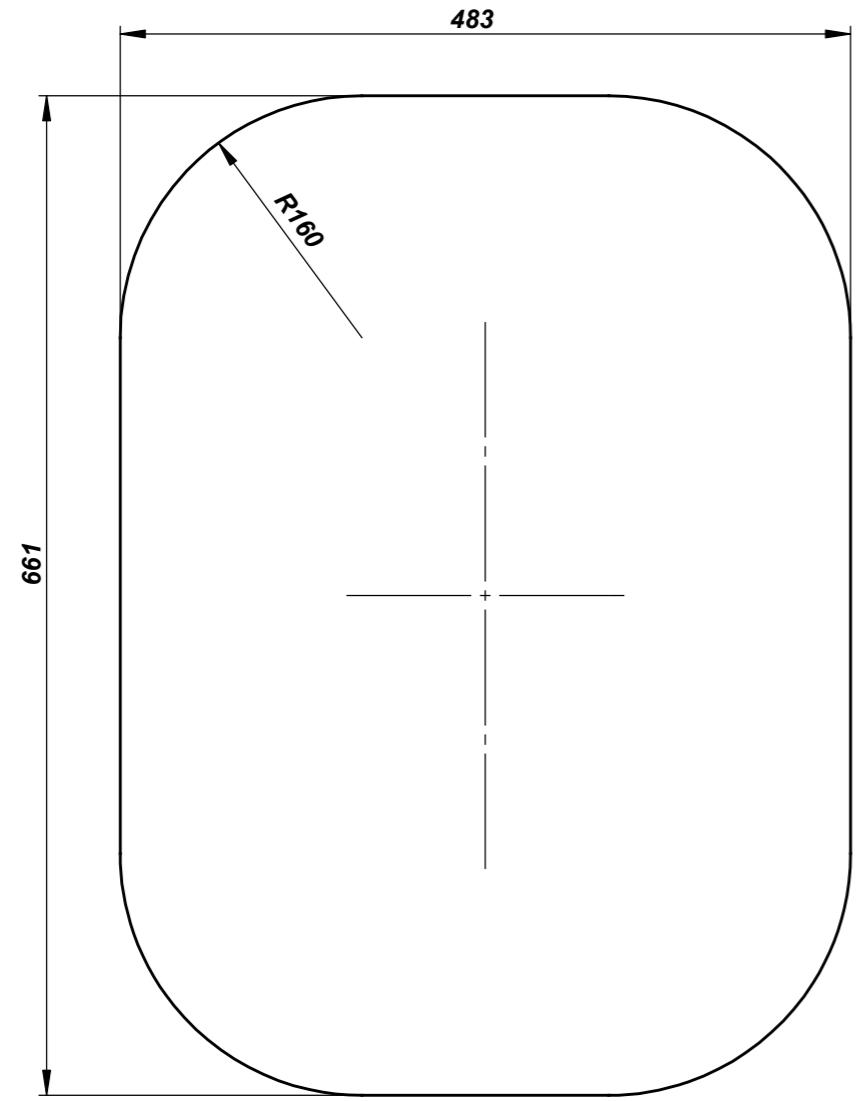
**Vertical position**

2.6	Type I Emergency door	2	Carbon fiber	610x1220x269,2
Item	Name	Quantity	Material	Measures (mm)

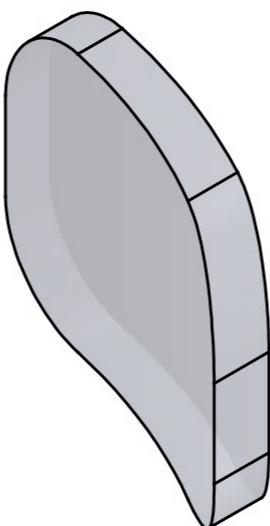
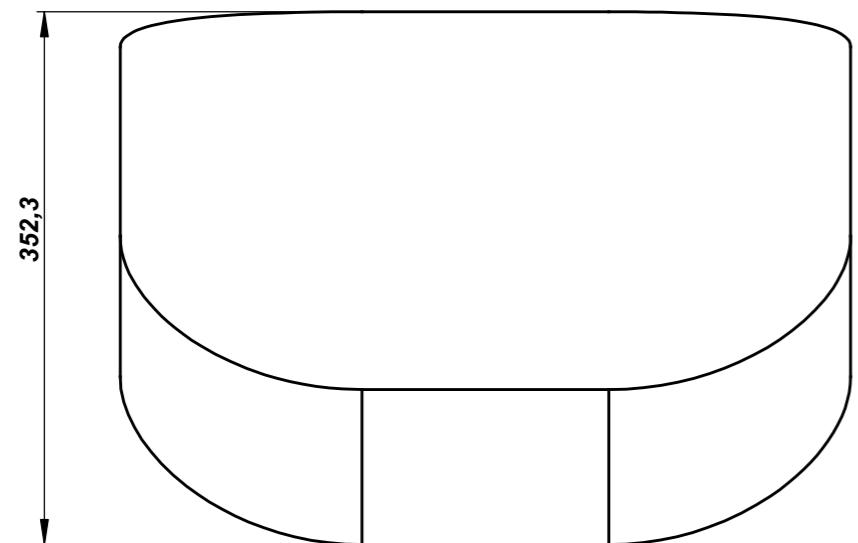
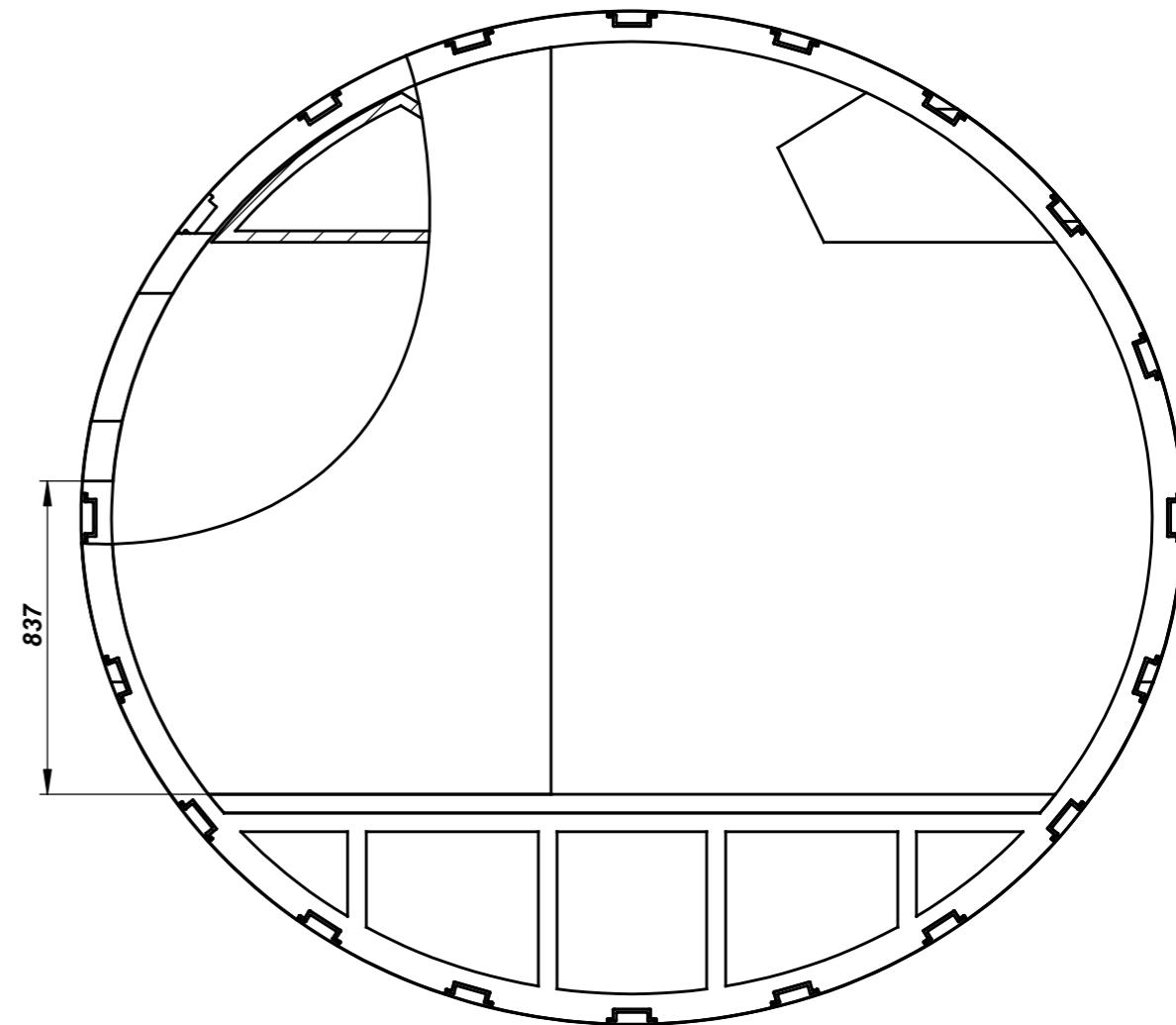
Q  REGIONAL C  AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
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SCALE 1:10	2. FUSELAGE	PAGE D21
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2.7

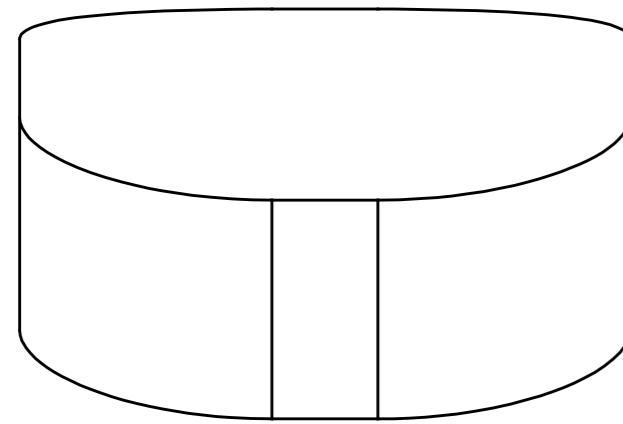
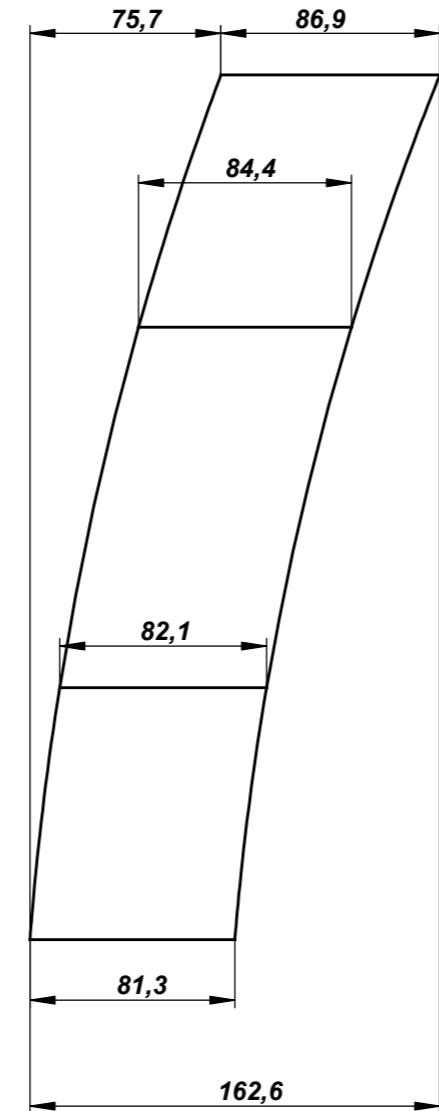
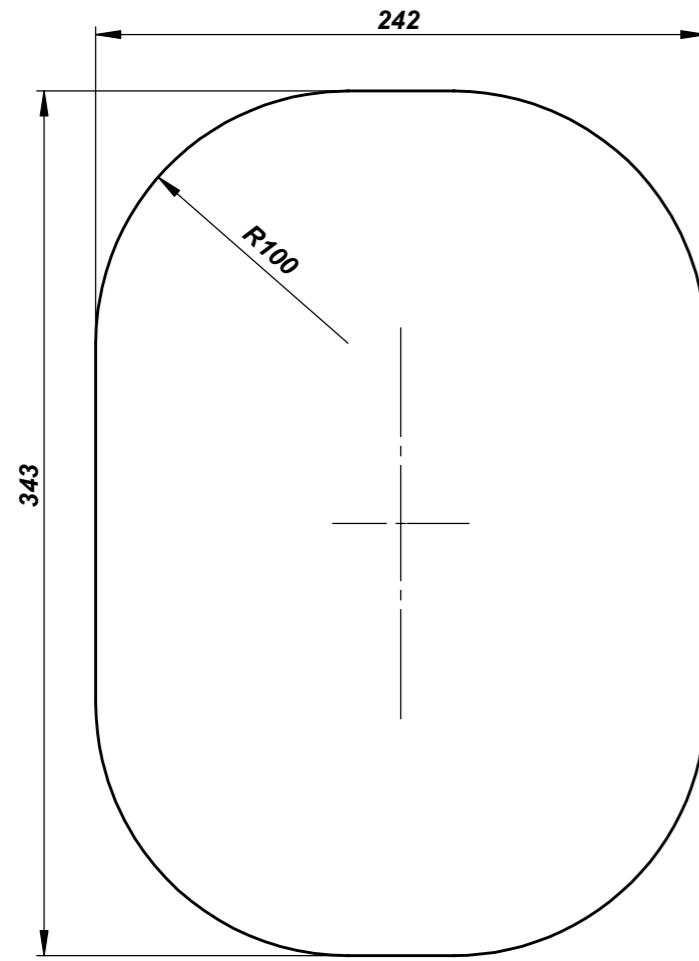


Vertical position

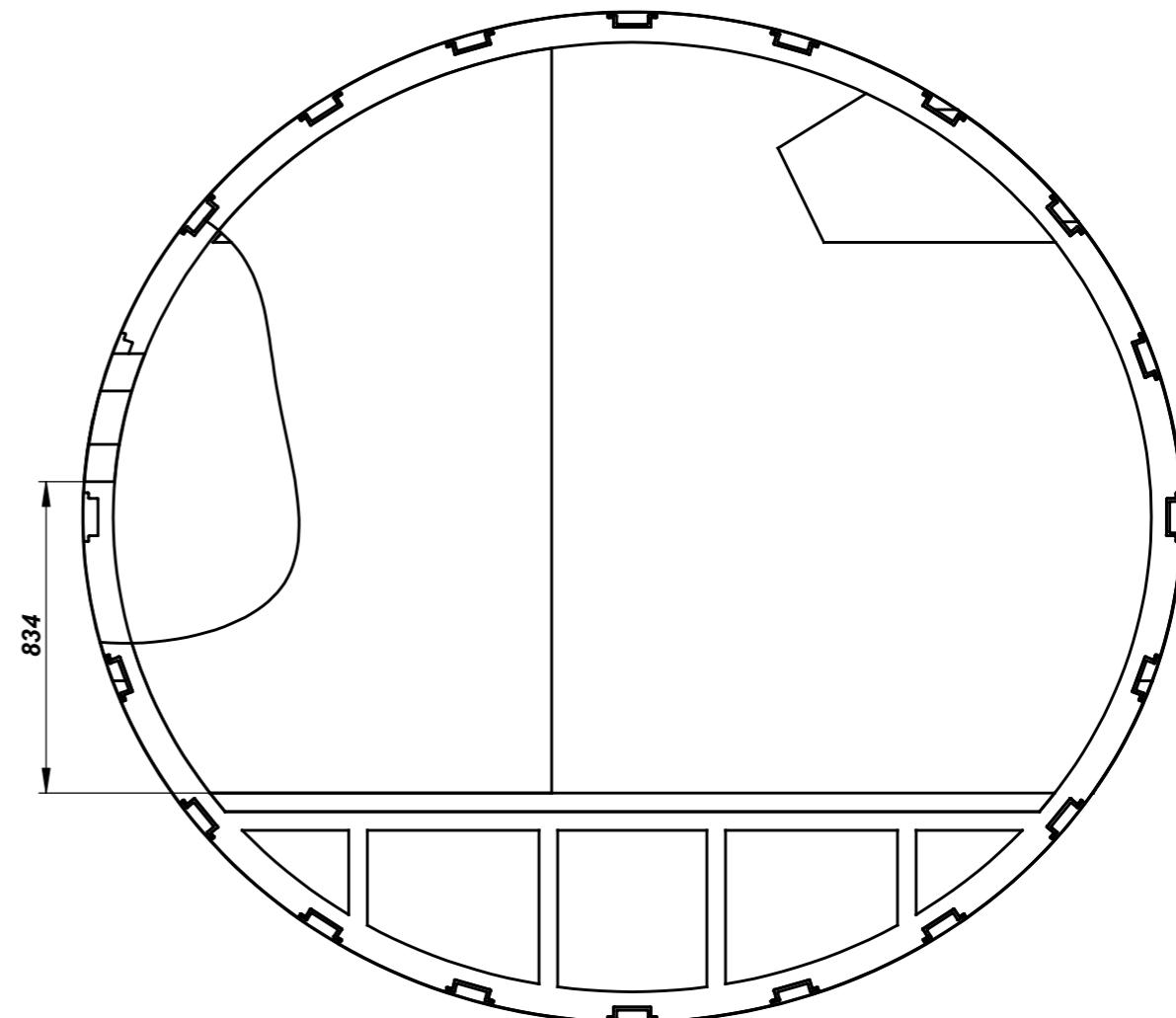


2.7	Type IV Emergency door	2	Carbon fiber	483x661x352,3
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:10	2. FUSELAGE	PAGE D22		

2.8

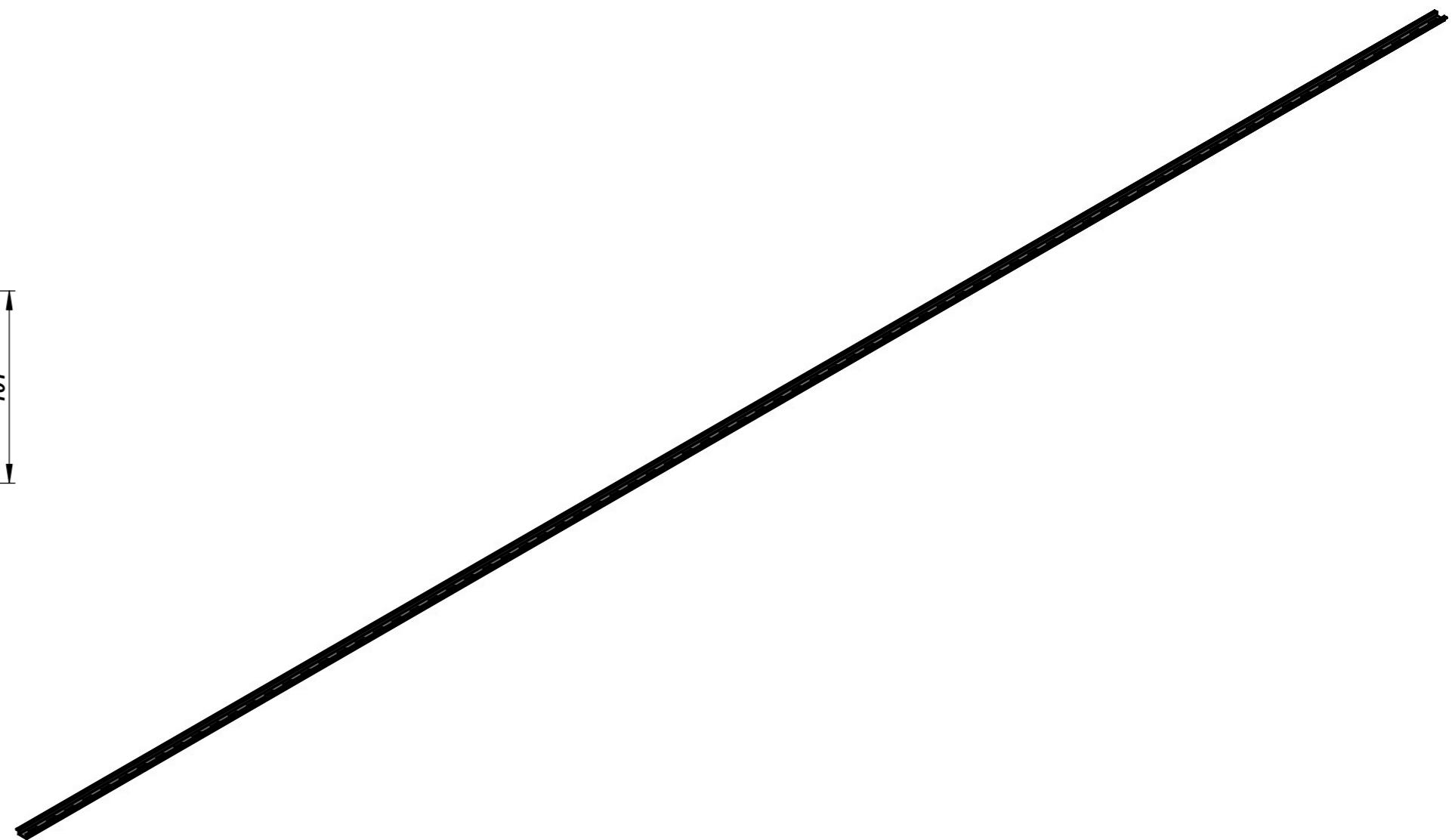
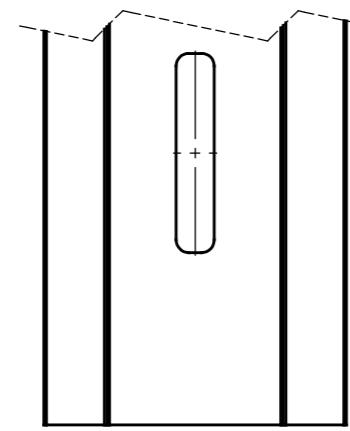
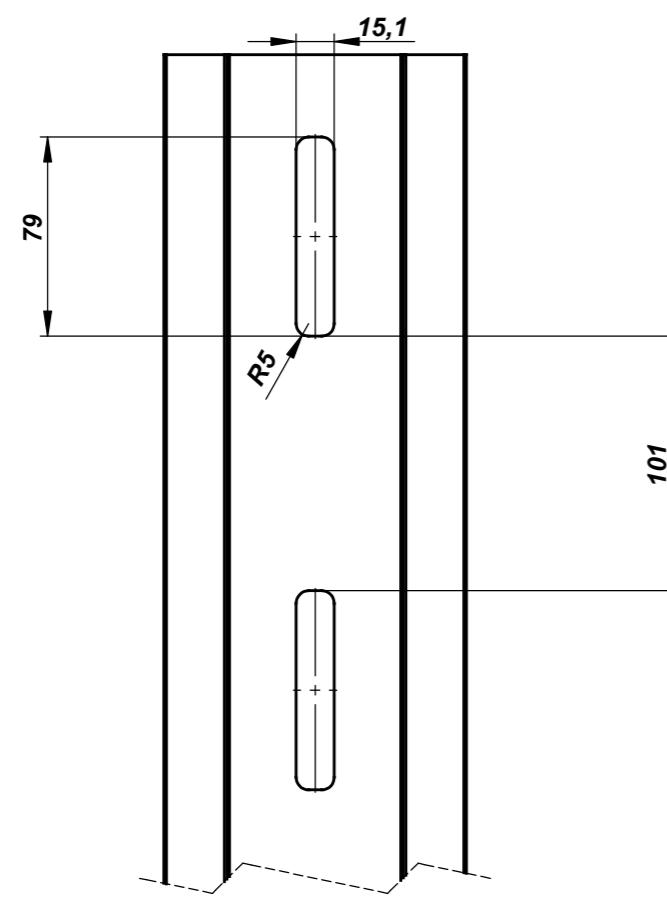
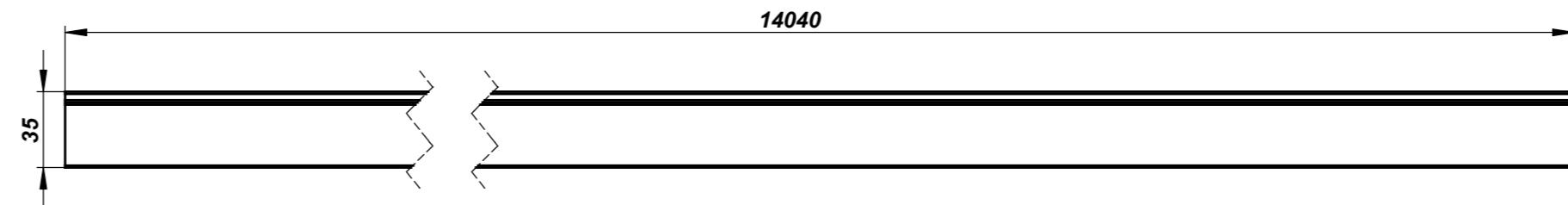
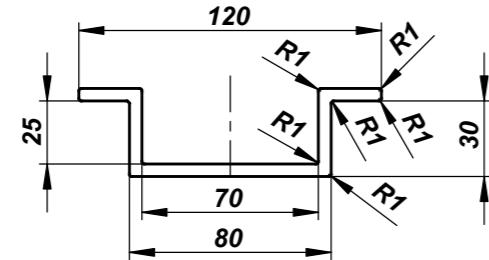


Vertical position of the window



2.8	Window	22	Polymer	242x343x162,6
Item	Name	Quantity	Material	Measures (mm)
Q REGIONAL C AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC TERRASSA	ESEIAAT
SCALE 1:3	2. FUSELAGE		PAGE D23	

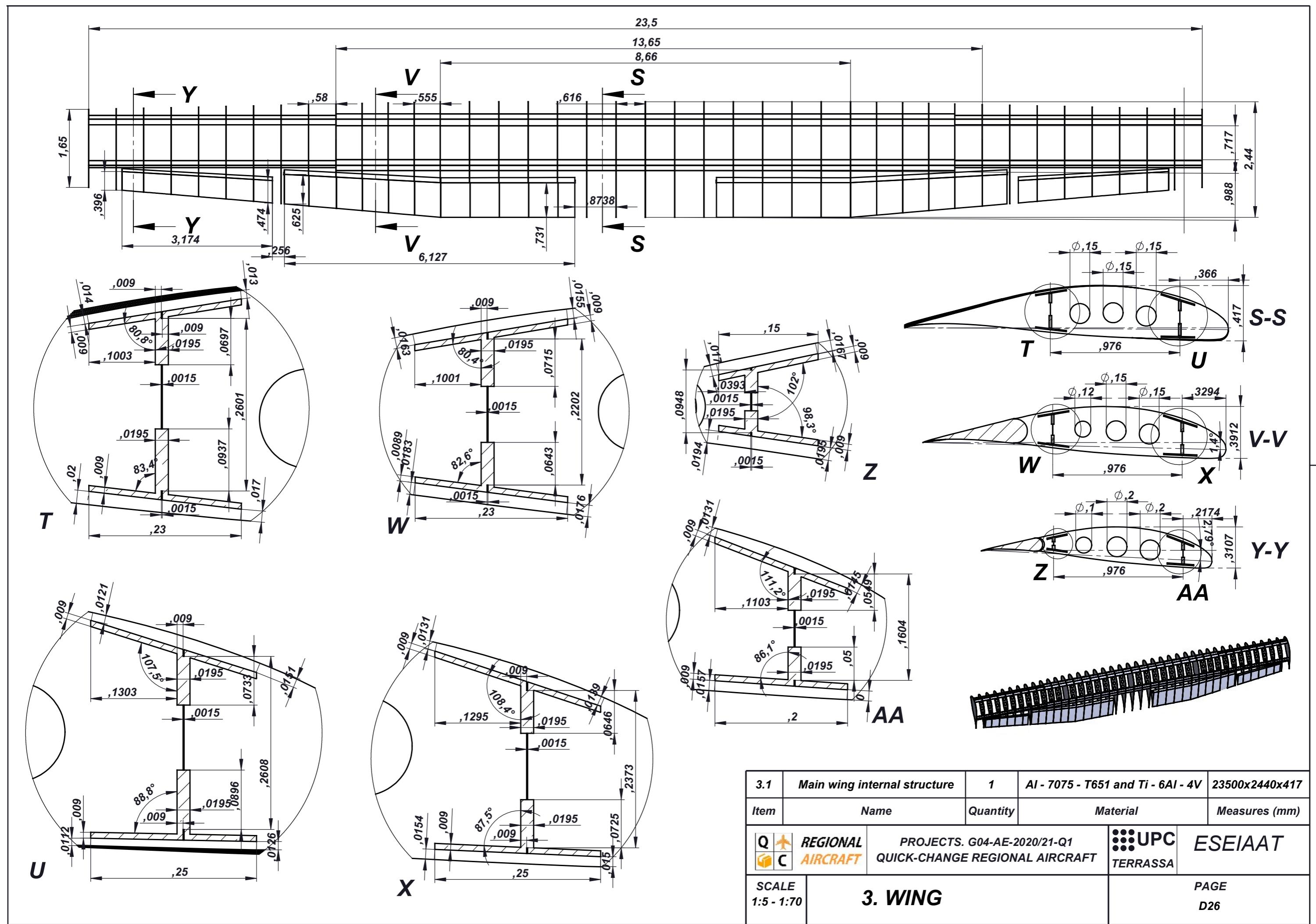
2.9



2.9	Fuselage outer rail	2	Steel	120x35x14040
Item	Name	Quantity	Material	Measures (mm)
Q  REGIONAL C  AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT			UPC TERRASSA
SCALE 1:3	2. FUSELAGE			PAGE D24

4 Wing

The wing system drawing is added in Page D26.



5 Empennage

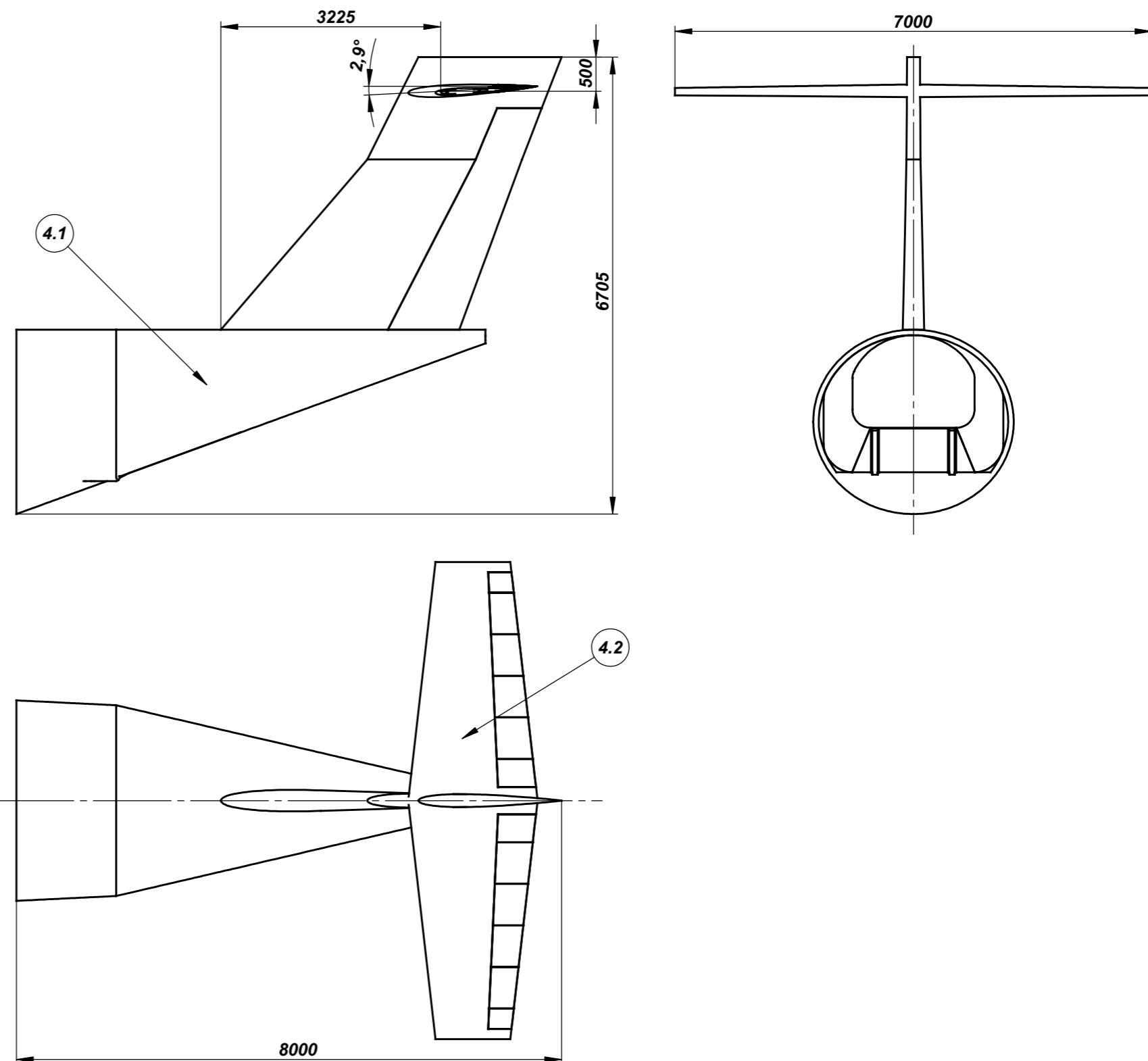
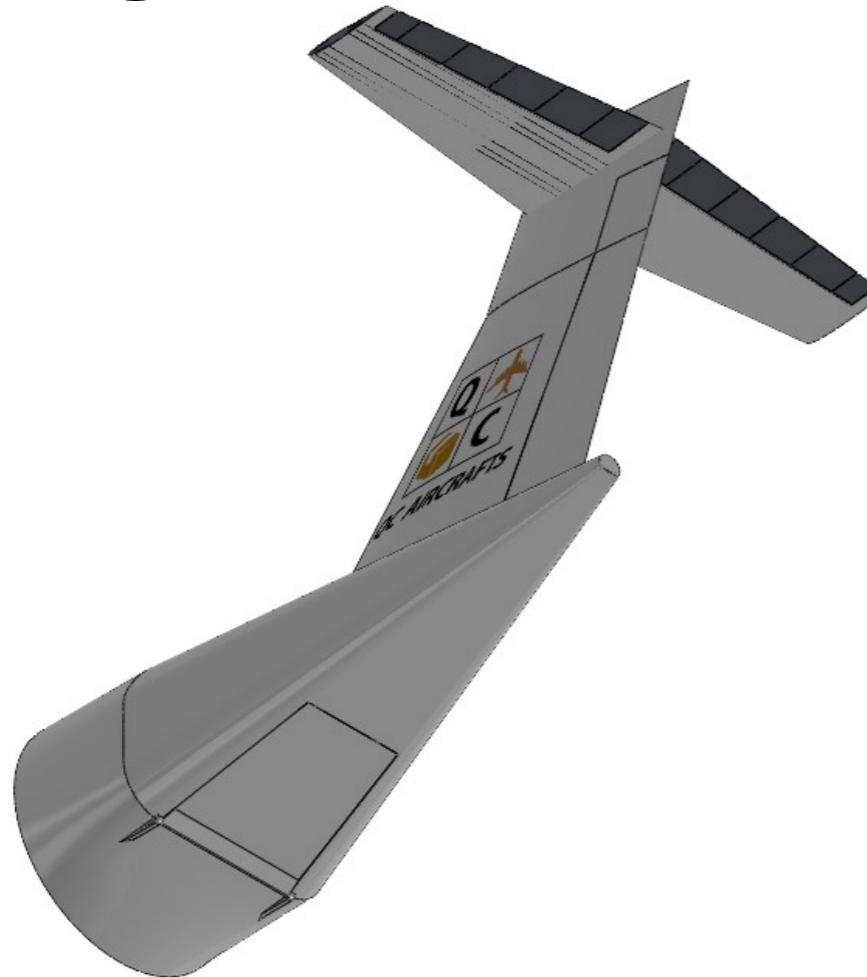
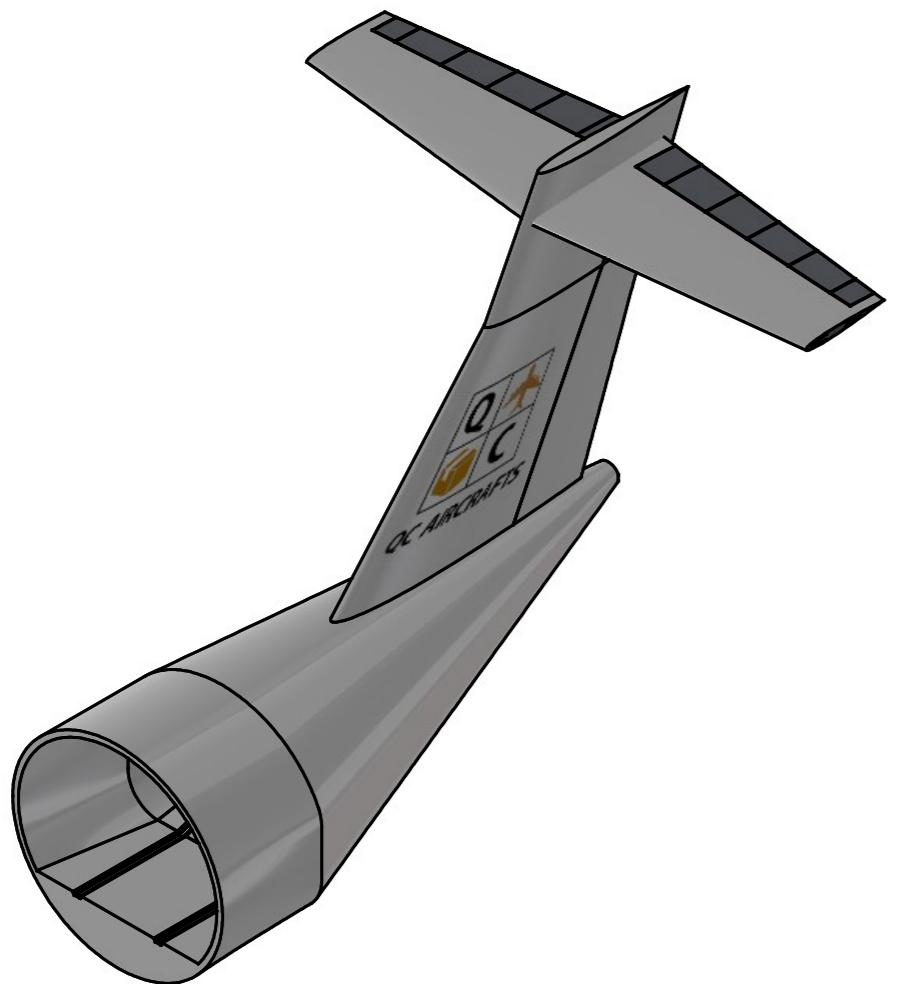
The empennage system assembly drawing is added in Page D28.

5.1 Rear fuselage and vertical stabiliser

The corresponding subsystem drawing is included in Page D29.

5.2 Horizontal stabiliser

The corresponding subsystem drawing is included in Page D30.

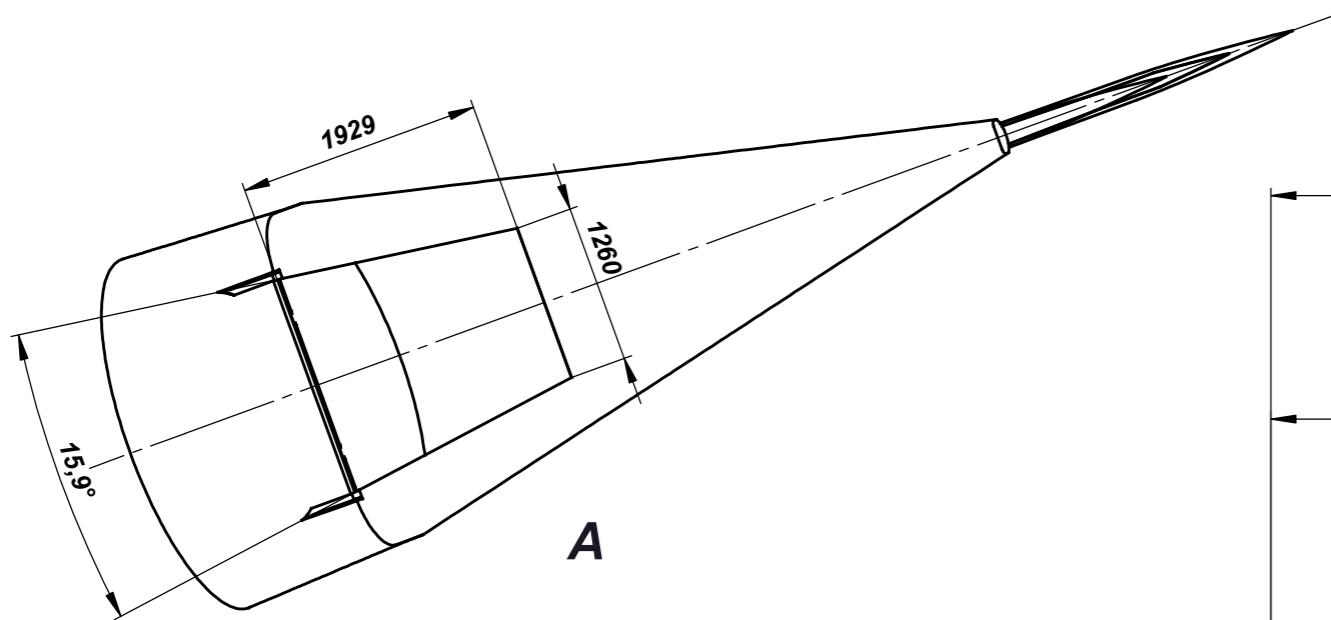
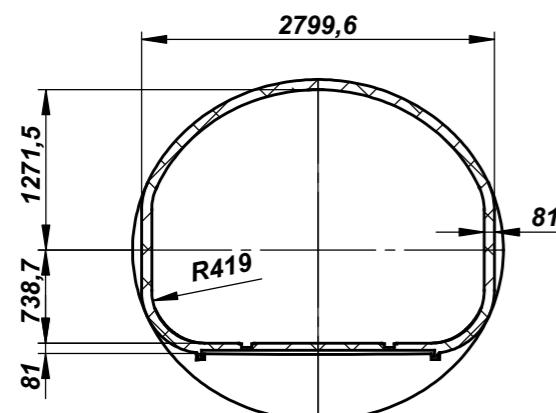
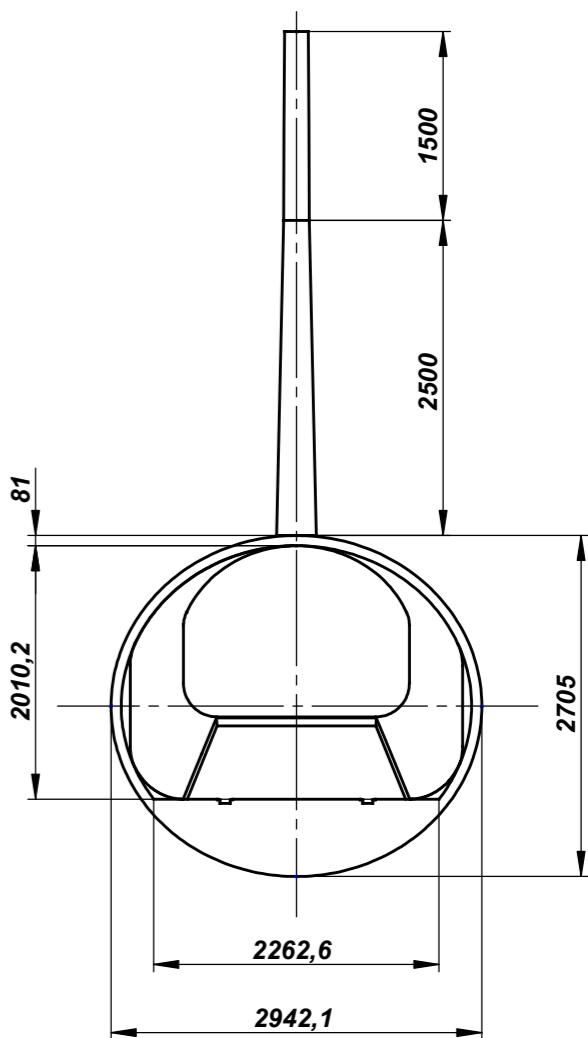
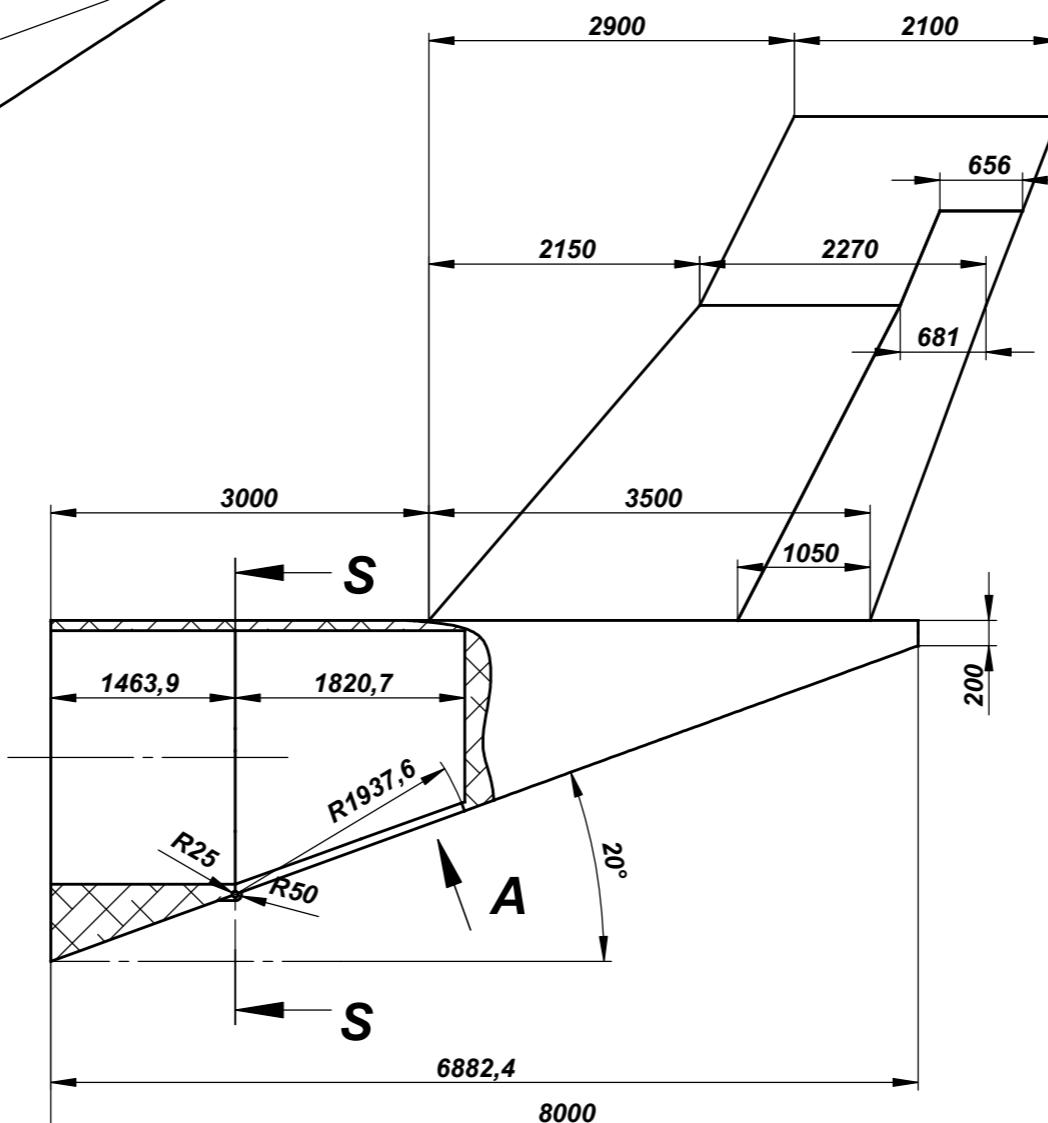
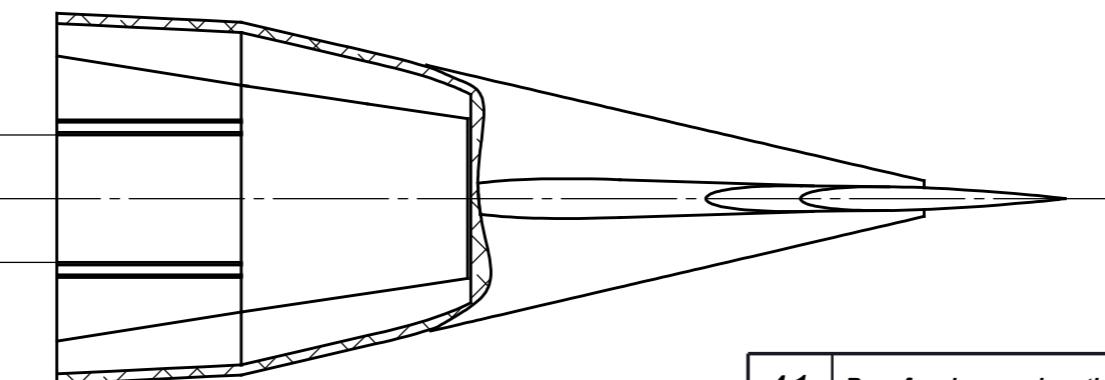


4.2	Horizontal stabiliser	1	AI 7075-T651 (spars, ribs), ARALL (skin)	1900x8,5x3500
4.1	Rear fuselage and vertical stabiliser	1	AI 7075-T651	8000x6705x2942,1
Item	Name	Quantity	Material	Measures (mm)

REGIONAL AIRCRAFT PROJECTS. G04-AE-2020/21-Q1
QUICK-CHANGE REGIONAL AIRCRAFT

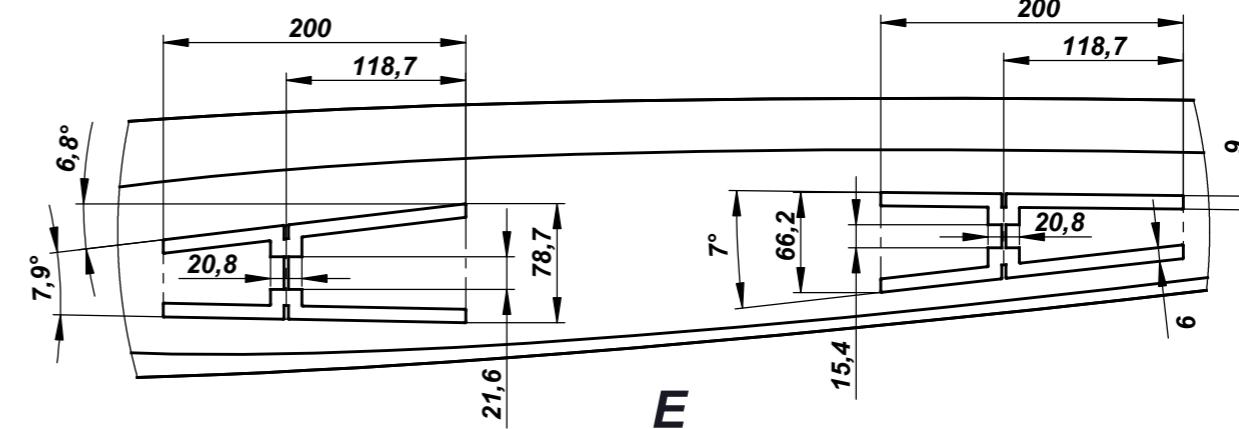
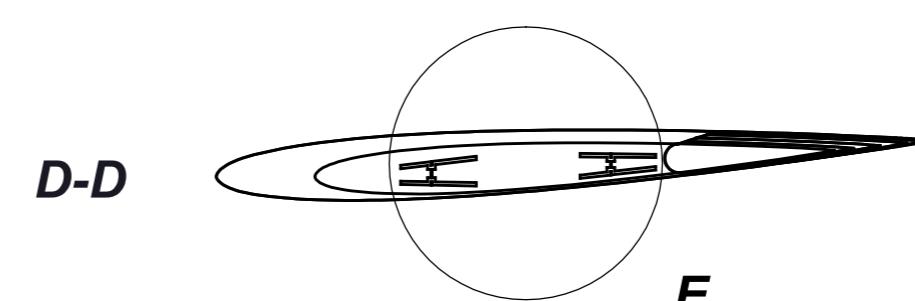
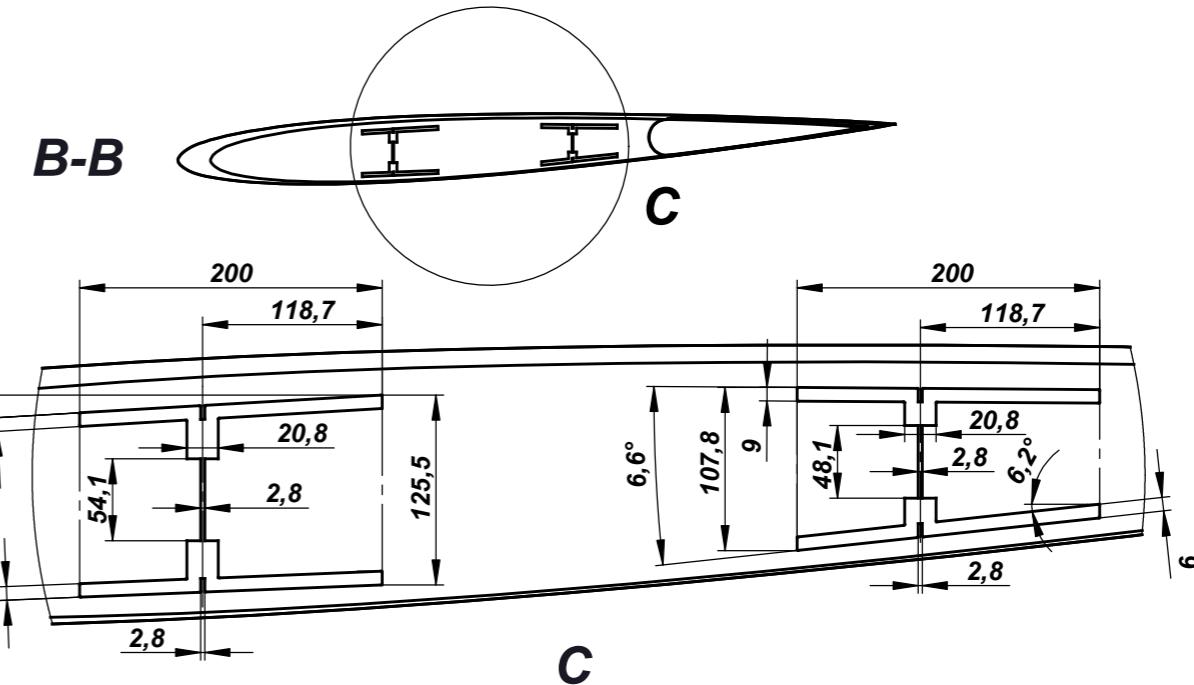
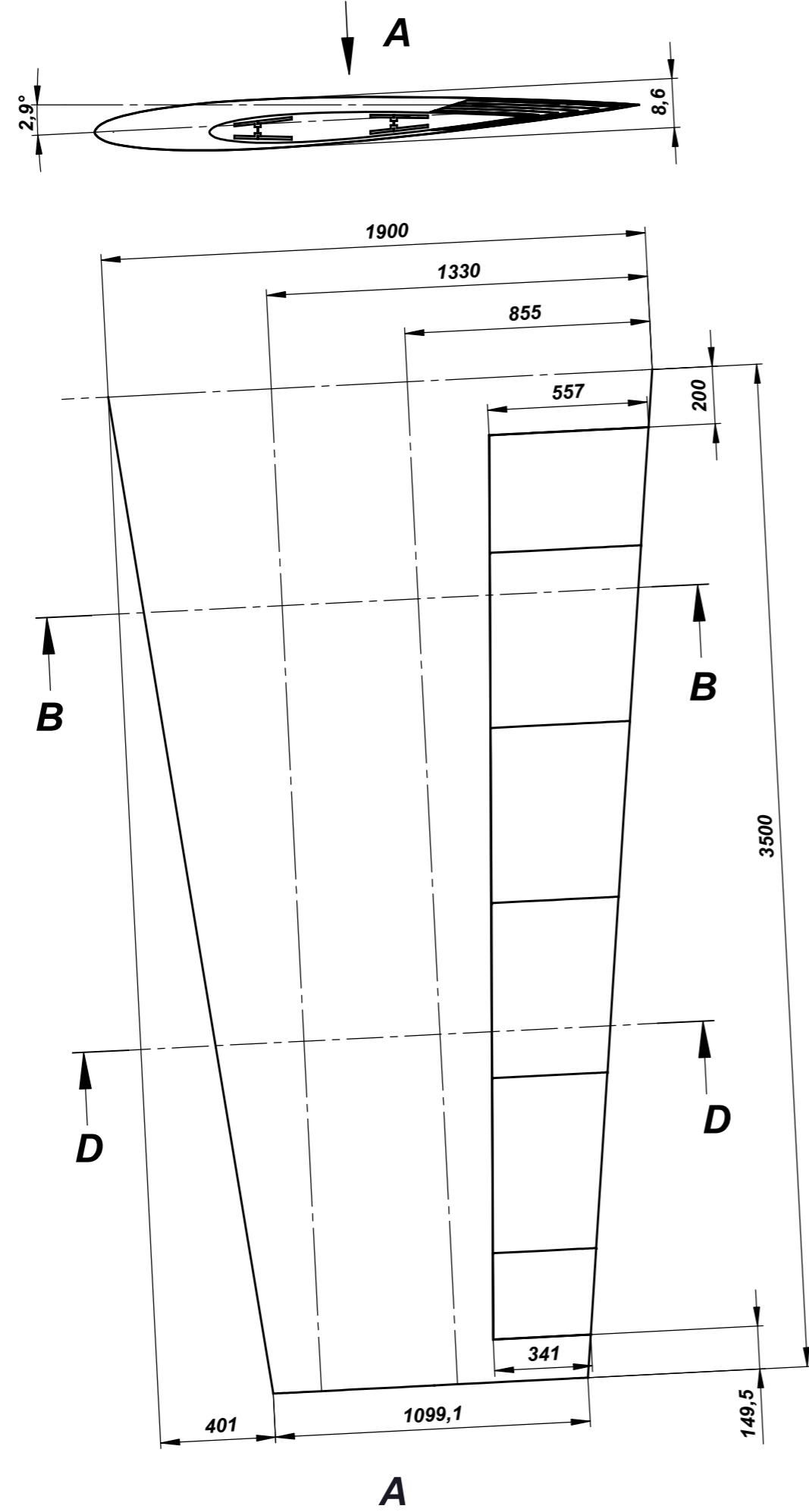
SCALE 1:75	4. EMPENNAGE	PAGE D28
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4.1

**A****S-S**

4.1	Rear fuselage and vertical stabiliser	1	AI 7075-T651	8000x6705x2942,1
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT	PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT	UPC TERRASSA	ESEIAAT
SCALE 1:60	4. EMPENNAGE	PAGE D29		

4.2



4.2	Horizontal stabiliser	1	AI 7075-T651 (spars, ribs), ARALL (skin)	1900x8,5x3500
Item	Name	Quantity	Material	Measures (mm)
Q C	REGIONAL AIRCRAFT PROJECTS. G04-AE-2020/21-Q1 QUICK-CHANGE REGIONAL AIRCRAFT		UPC TERRASSA	ESEIAAT
SCALE 1:20	4. EMPENNAGE		PAGE D30	